

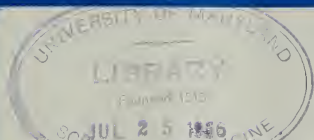
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MEDICINE



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JULY 1956

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Pills May Someday Replace Insulin Injections

A sulfonamide derivative which can be taken in pill form may some day replace insulin injections for certain types of diabetics, two Indianapolis physicians said recently.

Experiments with the drug, carbutamide, have been widespread in Germany and are now being carried on among several hundred diabetics in this country. Its exact role in the treatment of diabetes is still to be determined, but it appears to be helpful in some cases of the disease, the doctors said in a recent issue of the *Journal of the American Medical Association*.

On the basis of research done so far, it is unlikely that the drug will be on sale for some time. At present it is available only for experimental purposes. Many other products have been tested in the hope of replacing insulin injections but none have worked well enough.

Carbutamide (called BZ-55 by its German investigators) and a related compound, tolbutamide, which is also being tested, are classed with the germ-killing sulfonamide derivatives which have been shown to lower blood sugar levels. This lowering—essential to life for the diabetic—is now done through diet and by giving insulin injections to make up the shortage of insulin resulting from either poor production by the pancreas or destruction of insulin by some unknown agent in the body.

Drs. Anthony S. Ridolfo and William R. Kirtley of the Lilly Laboratory for Clinical Research, Indianapolis General Hospital, said their tests among 31 patients showed that carbutamide may help diabetics who are mature, obese or overweight, have relatively mild cases of short duration and have not required large amounts of insulin. However, it does not work among young diabetics or those threatened with coma. The usual diet restrictions must be kept even by patients who could satisfactorily substitute the drug for the injections and by those whose insulin requirements were reduced by the drug.

Time and experience are needed before any final evaluation can be made of the drug, and in the meantime it must be used with caution, they said. Only one of their test patients showed any toxic side-effects from the drug and they were temporary, but further experience is necessary to determine the actual extent of possible side-effects.

An accompanying editorial in the *Journal* said that it is still too early to predict carbutamide's future role in the treatment of diabetes. Before the drug can be used extensively, exhaustive trials must be conducted to determine its site and method of action, its possible harmful side-effects, and its actual value in treating diabetes.

The editorial warned that indiscriminate replacement of insulin injections by one of the new drugs

(Continued on Page 14)

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"Alcohol Pain" is Symptom Of Hodgkin's Disease

Pain following a drink of beer or other alcohol now has been added to the thousands of unusual tell-tale signs which help doctors to diagnose diseases.

Three Minnesota doctors recently reported that four patients with Hodgkin's disease suffered severe pain in the arms, chest, neck, shoulder, or low back within five minutes after taking any kind of alcoholic drink.

The report by Drs. John O. Godden, O. Theron Clagett, and Howard A. Andersen of the Mayo Clinic and Foundation, Rochester, was made in a

(Continued on Page 18)

Pills May Someday Replace Insulin Injections

(Continued from Page 10)

carries certain risks, especially in the presence of complications such as infection, surgery, or acidosis, a condition of acid-alkaline imbalance in the body. In these situations the new drugs have no place and insulin is the "irreplaceable drug of necessity."

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2. Zimmerman, F. T.: *New York J. Med.* 55:2338, 1955.



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"Alcohol Pain" is Symptom Of Hodgkin's Disease

(Continued from Page 14)

recent issue of the *Journal of the American Medical Association*.

Hodgkin's disease is a normally painless but progressive enlargement of the lymph nodes, spleen, and general lymphoid tissue, which often begins in the neck and spreads over the body.

The doctors said in their four patients the pain appeared almost immediately after a few swallows of alcohol. Neither the type of drink nor the amount consumed influenced the pain. The patients de-

scribed it as "paralyzing," "dragging," and "an achy numb feeling." The pain lasted from 15 or 20 minutes to three hours in the various patients.

The doctors noted at least 15 other reports of pain among Hodgkin's disease patients following the drinking of alcohol. The cause of the pain is unknown, but it often appears in regions known to be affected by the disease.

They said they agreed with other physicians who feel that "alcohol pain" is one good test for persons suspected of having Hodgkin's disease, and for detecting recurrences among treated patients. It also could be used to evaluate results of treatment.

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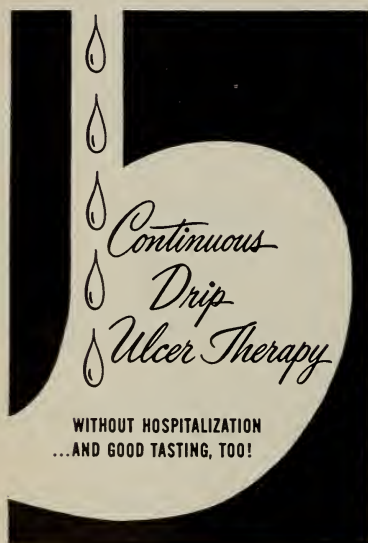
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A recent clinical study* of 46 ambulatory nonhospital patients treated with Nulacin† and followed up to 15 months describes the value of ambulatory continuous drip therapy by this method. Total relief of symptoms was afforded to 44 of 46 patients with duodenal ulcer, gastric ulcer and hypertrophic gastritis.

The delicately flavored tablets dissolve slowly in the mouth (not to be chewed or swallowed). They are not noticeable and do not interfere with speech.

Nulacin tablets are supplied in tubes of 25 at all pharmacies. Physicians are invited to send for reprints and clinical sample.

*Steigmann, F., and Goldberg, E.: Ambulatory Continuous Drip Method in the Treatment of Peptic Ulcer, *Am. J. Digest. Dis.* 22:67 (Mar.) 1955.

†Mg trisilicate 3.5 gr.; Ca carbonate 2.0 gr.; Mg oxide 2.0 gr.; Mg carbonate 0.5 gr.

TODAY's resistant pathogens are the tough survivors of a dozen widely used antibiotics. Certain organisms, notably *Staphylococcus aureus*⁴ and susceptible strains of *Proteus vulgaris* produce infections which have been resistant to all clinically useful antibiotics.

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SPECTRUM—'CATHOMYCIN'^{1,2,3,5,6} has also been shown to be active against other organisms including—*D. pneumoniae*, *N. intracellularis*, *S. pyogenes*, *S. viridans* and *H. pertussis*, but clinical evidence must be further evaluated before 'CATHOMYCIN' can be recommended for these pathogens.

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Automatic Injector Reduces Pain, Apprehension

Persons who have to give themselves daily injections of drugs can now do so without having to look at the needle and without having to muster up courage to pull the trigger.

They can use a new device called the Presto injector which fits around and hides the needle and syringe and which automatically releases the needle when the injector is pressed against the skin.

The new injector not only relieves apprehension, but also reduces the pain, because the needle passes quickly through the pain-sensitive layer of skin, according to Frank H. J. Figge, Ph.D., and Vernon M. Gelhaus, M.D., Baltimore, who tested the instrument, developed by investigators of the Becton, Dickinson Company, Rutherford, N. J.

They described the injector in a recent issue of the *Journal of the American Medical Association*.

The instrument is a series of metal cylinders in which the syringe and needle are placed. When the instrument is ready for use, the needle is entirely concealed in the bottom cylinder. The top part of the cylinder holds the syringe and also conceals the spring mechanism which activates the automatic trigger.

After cocking the trigger by extending the two parts of the cylinder, the rubber foot is pressed

against the skin until the automatic trigger releases the spring which pushes the needle and syringe straight forward at high speed. After the needle has entered the skin, the vaccine is injected in the usual way by pushing the syringe plunger.

The fact that the needle is entirely hidden from view has a "very remarkable" effect, especially among children, they said. The very sight of a needle apparently leads many patients to receive "an exaggerated impression" of the pain actually produced, they said.

Forty of fifty men given injections with the new injector felt nothing at all, while eight had a "slight sensation" and only two a "slight sting." In comparison, only two of 50 felt no pain when given injections with an exposed needle, while five felt "pain." Twenty-two noticed a "slight sting," 13 a "sting" and eight a "slight sensation."

The automatic trigger has some influence on the degree of pain, because it eliminates the nervous tension that develops before the trigger on other injectors is pulled, they said. The instrument, which is for subcutaneous and intramuscular injections, contains a feature to help prevent injecting the drug into a vein.

The injector's greatest use will be among persons who require self-injection of drugs, for whom it is "ideal," they said.



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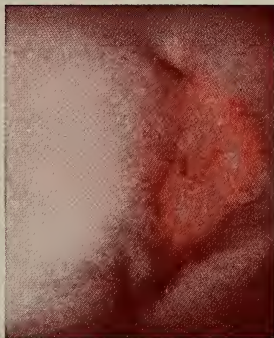
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3. McGivney, J.: Recent Advances in Proctology, *Texas J. Med.* 47:770 (Nov.) 1951.



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Traction Device Resembles Corset and Puttee

Two California doctors have successfully tried out a device for leg traction in hip and back disorders which is something like a cross between a lady's corset and a soldier's puttee.

Drs. Carl E. Anderson and R. Dee Robbins, Santa Rosa, Calif., devised a simple one-piece skin traction legging of foam rubber and elastic corset material with attached straps and buckles which can be applied by patients or other untrained persons with little instruction or risk.

They used the traction legging over a period of

five years on about 1,000 patients, both at home and in the hospital, with satisfactory results and none of the serious skin, nerve, or circulatory difficulties often caused by skin traction.

The legging is wrapped around the lower leg between the knee and ankle and buckled in place. A spreader is attached to the lower end and the desired weight applied over a pulley to keep a steady lengthwise pull on the lower leg. Neither skin adherent nor padding is necessary.

Advantage of the legging over conventional skin traction devices are its simplicity of application and adjustment which permits use by an unskilled person.

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Physicians Endorse Health Groups' Advice

A recent survey has shown that the average doctor strongly endorses the mass education programs of voluntary health groups and thinks they have been influential in getting people to the doctor in earlier stages of illness.

He is convinced that more people actually do come to his office sooner than they did 10 years ago, especially in the case of cancer.

The average doctor surveyed believes that all adults should get a general physical checkup every year and thinks it is very important for the public to be informed about health and medical matters.

The survey is one of a series conducted by the National Opinion Research Center, Princeton, N. J., under a grant from the Health Information Foundation. Through a supplementary grant from the American Cancer Society, 500 doctors named as personal physicians by individuals were interviewed concerning their views of the educational programs of the cancer group and various other organizations.

The survey, reported in a recent issue of the *Journal of the American Medical Association*, showed that:

Between 92 and 100 per cent of the physicians say the patient should see a doctor right away about symptoms (such as a sore that doesn't heal, an un-

usual bleeding or discharge, or a persistent cough) which might signify cancer.

Seventy-seven per cent say all persons should have an annual checkup, although 55 per cent say they do not "make a point of recommending regular checkups." One doctor in eight says that preventive checkups in the absence of any complaint are not worth the trouble if the patient generally feels well, while another one in 10 says they are useful only for persons past a certain age or with a particular medical history.

Interviews with the general public show that 80 per cent of adults endorse the principle of a general physical checkup every year, "even if a person is feeling all right," but only three out of 10 persons even claim to get such checkups in actual practice.

Monthly breast self-examination for cancer is approved by 79 per cent of the doctors, while semi-annual pelvic examinations for all women over 35 years are approved by 71 per cent.

Semiannual chest x-ray examinations for all men over 45 are approved by only 42 per cent of the doctors.

Ninety-eight per cent of doctors believe the mass education programs on such conditions as heart disease, cancer, and tuberculosis have served a constructive purpose.

In response to the question, "Do you believe these

(Continued on Page 38)



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BOOKS RECEIVED

AN ATLAS OF REGIONAL DERMATOLOGY—G. H. Percival, M.D., Ph.D., F.R.C.P.E., D.P.H., Grant Professor of Dermatology; and T. C. Dodds, F.I.M.L.T., F.I.B.P., F.R.P.S., Laboratory Supervisor, Department of Pathology; both from the University of Edinburgh. The Williams and Wilkins Company, Baltimore, 1955. 264 pages, 475 figures in full color, \$19.00.

* * *

ANESTHESIA FOR OBSTETRICS—Labor-Deliver-Infant Care—Robert A. Hingson, Professor of Anesthesia, Western Reserve University; and Louis M. Hellman, Professor of Obstetrics and Gynecology, University of New York College of Medicine. J. B. Lippincott Company, Philadelphia, 1956. 344 pages, \$12.50.

* * *

BONE—An Introduction to the Physiology of Skeletal Tissue—Franklin C. McLean, Ph.D., M.D., Professor Emeritus of Pathological Physiology, The University of Chicago; and Marshall R. Urist, M.D., Associate Clinical Professor of Surgery (Orthopedic) University of California, Los Angeles. The University of Chicago Press, 1956. 182 pages, \$6.00.

* * *

BORDERLANDS OF THE NORMAL AND EARLY PATHOLOGIC IN SKELETAL ROENTGENOLOGY—Tenth Edition—Prof. Alban Köhler—Completely revised with reference to illustrations and to text by Dozent Dr. E. A. Zimmer, Bern/Fribourg, English translation arranged and edited by James T. Case, M.D., D.M.R.E., (Cambridge) Professor Emeritus of Radiology, Northwestern University Medical School, Chicago. Grune and Stratton, Inc., New York, 1956. 723 pages, \$24.50.

* * *

CYTOLOGY OF THE BLOOD AND BLOOD-FORMING ORGANS—Marcel Bessis, Director of Research Laboratory, Centre National de Transfusion Sanguine, Paris, France, translated by Eric Ponder. Grune and Stratton, New York, 1956. 629 pages, \$22.00.

* * *

DISEASES OF THE NOSE, THROAT AND EAR—A Handbook for Students and Practitioners—Sixth Edition—I. Simson Hall, M.B., Sh.B., F.R.C.P.E., F.R.C.S.E., Surgeon to Royal Infirmary, Edinburgh. E. & S. Livingstone, Ltd., Edinburgh. Distributed in U.S.A. by The Williams and Wilkins Company, Baltimore, 1956. 463 pages, \$4.75.

* * *

DISEASES OF THE SKIN—11th Edition—Richard L. Sutton, Jr., A.M., M.D., F.R.S. (Edin.), Chairman of the Department of Dermatology, University of Kansas Medical Center. The C. V. Mosby Company, St. Louis, 1956. 1,479 pages, 1,972 illustrations, \$29.50.

* * *

DICTIONARY OF DIETETICS—Rhoda Ellis, Ph.D., Instructor of Foods and Nutrition, Department of Home Economics, Brooklyn College, New York. Philosophical Library, New York, 1956. 152 pages, \$6.00.

* * *

DOCTOR IN PERSONAL INJURY CASES, THE—Harold A. Lievensen, Member of Illinois, Chicago and American Bar Associations. The Year Book Publishers, Inc., Chicago, 1956. 123 pages, \$4.00.

* * *

HANDBOOK OF PHYSICAL THERAPY—Robert Sheslack, Ph.G., G.R.P., P.T.R., Springer Publishing Company, New York, 1956. 212 pages, \$4.25.

(Continued on Page 34)

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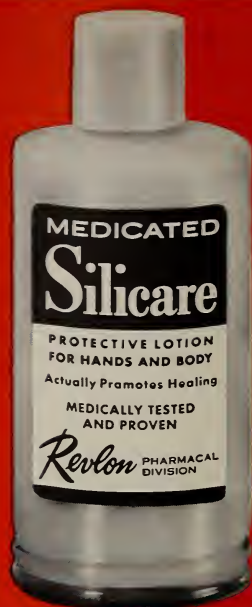
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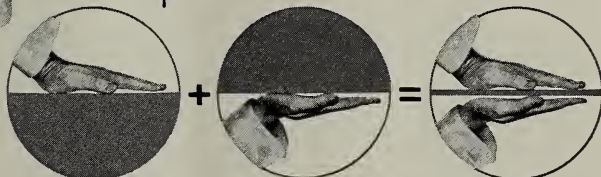
*Le Van, P., Sternberg, T. H., and Newcomer, V. D., Cal. Med., 81:210-213, Sept. 1954.

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1. Arnoff, B.: Personal communication. 2. Lazarte, J. A., and Petersen, M. C.: Personal communication.

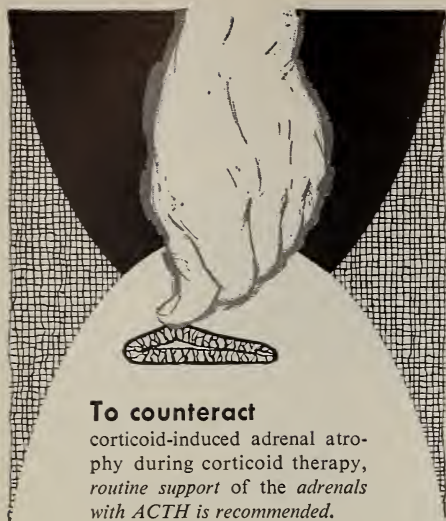
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(Continued from Page 31)

HISTAMINE—Ciba Foundation Symposium—Editors: G. E. W. Wolstenholme and Cecilia M. O'Connor. Little, Brown and Company, Boston, 1956. 472 pages, \$9.00.

* * *

MANAGEMENT OF MENSTRUAL DISORDERS, THE—C. Frederic Fluhmann, B.A., M.D., C.M., Clinical Professor of Obstetrics and Gynecology, Stanford University School of Medicine, W. B. Saunders, Philadelphia, 1956. 350 pages, 121 figures, \$8.50.

* * *

MEDICAL PARASITOLOGY—For Medical Students and Practicing Physicians—2nd Edition—William G. Sawitz, M.D., Professor of Parasitology, Associate in Medicine, The Jefferson Medical College of Philadelphia. The Blakiston Division, McGraw-Hill Book Company, Inc., New York, 1956. 342 pages, \$6.00.

* * *

MEDITATIONS ON MEDICINE AND MEDICAL EDUCATION—Past and Present—J. Snapper, M.D., Grune and Stratton, New York, 1956. 138 pages, \$3.75.

* * *

MENNINGER STORY, THE—Walker Winslow. Doubleday & Company, Garden City, N. Y., 1956. 350 pages, \$5.00.

* * *

MENTAL HEALTH PLANNING FOR SOCIAL ACTION—George S. Stevenson, M.D., Sc.D., National and International Consultant, The National Association for Mental Health, Inc. The Blakiston Division, McGraw-Hill Book Company, New York, 1956. 358 pages, \$6.50.

* * *

NEW AND NON-OFFICIAL REMEDIES—1956—Containing Descriptions of the Drugs Evaluated by the Council on Pharmacy and Chemistry of the A.M.A. J. B. Lippincott Company, Philadelphia, 1956. 540 pages, \$3.35.

* * *

OFFICE ASSISTANT, THE—In Medical or Dental Practice—Portia M. Frederick, Instructor, Medical Office Assisting, Long Beach City College; and Carol Townner, Executive Assistant, Department of Public Relations, American Medical Association, W. B. Saunders Company, Philadelphia, 1956. 351 pages, \$4.75.

* * *

PREFACE TO EMPATHY—David A. Stewart, Chief Psychologist, Bell Clinic, Toronto. The Philosophical Library, Inc., 15 East 40th St., New York 16, New York, 1956. 157 pages, \$3.75.

* * *

PROGRESS IN HEMATOLOGY—Volume I—1956—Edited by Leandro M. Tocantins, M.D., with 27 contributors. Grune & Stratton, Inc., 381 Fourth Ave., New York 16. 336 pages, \$9.75.

* * *

PSYCHOSOMATIC ASPECTS OF SURGERY—Edited by Alfred J. Cantor, M.D., and Arthur N. Foxe, M.D. The Proceedings of the First Annual Meeting of the Academy of Psychosomatic Medicine, October, 1954. Grune and Stratton, New York, 1956. 220 pages, \$6.50.

* * *

THRESHOLDS OF EXISTENCE—A Theory of Creation and of Evolution as a Way of Life—Upton Clary Ewing. The Philosophical Library, 15 East 40th Street, New York 16, New York, 1956. 256 pages, \$3.75.

* * *

VIRUS DISEASES AND THE CARDIOVASCULAR SYSTEM—A Survey—Ernest Lyon, M.D., Grune & Stratton, New York, 1956. 215 pages, \$5.75.

* * *

YEARBOOK OF MODERN NURSING 1956, THE—Edited by M. Cordelia Cowan, Nursing Educator, Author, Editor. Foreword by Mary M. Roberts, Editor Emeritus, American Journal of Nursing. G. P. Putnam's Sons, New York. 446 pages, \$4.95.



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Physicians Endorse Health Groups' Advice

(Continued from Page 28)

programs have done any harm?" 56 per cent replied, "No, no harm at all," while 44 per cent answered, "yes," and almost all of these referred in some way to the arousal of fear. However, only 7 per cent suggested less emphasis on fear of the disease in information programs and fund-raising appeals. Three-fourths of the doctors could not name any activity they would like changed or curtailed, and almost half of them suggested expanding activities. Seventeen per cent suggested more public education.

Social Workers Assume Role in Private Medical Office

The medical social worker has moved from the hospital and outpatient clinic to the private physician's office.

Dr. H. M. Margolis and Harold Mendelsohn, M.S.W., Pittsburgh, explained in a recent issue of the *Journal of the American Medical Association* the role a social worker can play in a private practice.

The influence of environmental and personal factors upon health is generally recognized today, they

(Continued on Page 42)

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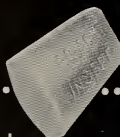
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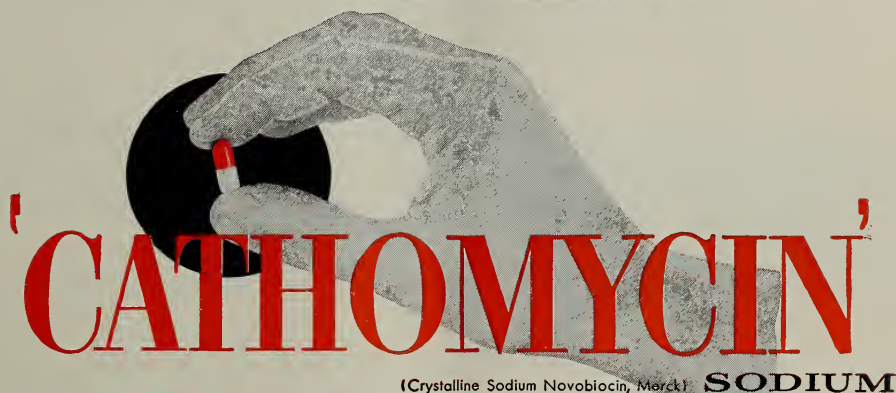
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Social Workers Assume Role In Private Medical Office

(Continued from Page 38)

said. Physicians often can help the patient solve some of his emotional problems, but if they are too involved or time-consuming, a social worker may be invaluable, the authors said.

Medical social workers have long worked in hospitals and outpatient clinics, usually with indigent patients, but poverty should not be the criterion for need of social work help, they said. The private patient, as well as the indigent, has fears of disease or disability, worries about family adjustment, and dissatisfaction with themselves, their neighbors, or their work—all of which can adversely affect health or recovery.

Specially trained to deal with the social stress factors in a patient's life, the social worker can help

the patient to understand better the effects of his reactions to many life experiences and pressures in his society.

Such aid can be extended only to selected patients—those who have illnesses directly connected with stress and those who are willing to undertake such treatment. Even with them, the social worker must overcome the patients' resistance to further treatment and their fears that casework implies mental illness or the inability to handle their own problems.

Some patients who have been helped by medical social caseworkers feel that the physician has made it possible for them to work out their problems, the authors said. They also see this assistance as proof of their physician's real interest in them and as a method of practicing "comprehensive medicine."

Dr. Margolis is from the school of medicine of the University of Pittsburgh and Mr. Mendelsohn from the school of social work.



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L-Thyroxine	0.1 mg.
Ethinyl Estradiol	1 mg.
Methyltestosterone	1 mg.
Liver Fraction I	25 mg.
Ethyl Alcohol	0.5 cc.

Dosage: One teaspoonful twice daily before meals, or as required.

Supplied: In 16 fluid ounce bottles, prescription only.

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1. Anonymous. 2. Rosenthal, P.: Geriatrics 10:382 (August) 1955. 3. Lansing, A. I.: Symposium on Problems of Gerontology, National Symposium Series No. 9 (August) 1954. 4. Mason-Hohl, E.: Quoted in W. Va. Med. J. 51:16 (Janu-

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American Medical Association Past President Calls Press "Top-Grade"

Dr. Elmer Hess, past president of the American Medical Association, recently called the American press "alert, responsible and top-grade."

He said in a recent issue of the *Journal of the American Medical Association* that he found newspaper reporters courteous, accurate and fair during his years as American Medical Association president-elect and president. In nearly every case the stories they wrote were accurate, objective, and interesting, he said.

Dr. Hess asked physicians to cooperate with local newspapers and radio and television stations in providing necessary medical facts and opinions. He urged doctors not to ignore their requests or to be too busy to talk with them.

"They are your friends, and if you are frank and honest with them, they in turn will be the same with you," he said. "Let us all remember that the press is the greatest education unit today."

He concluded with the hope that the American press may continue to be independent.

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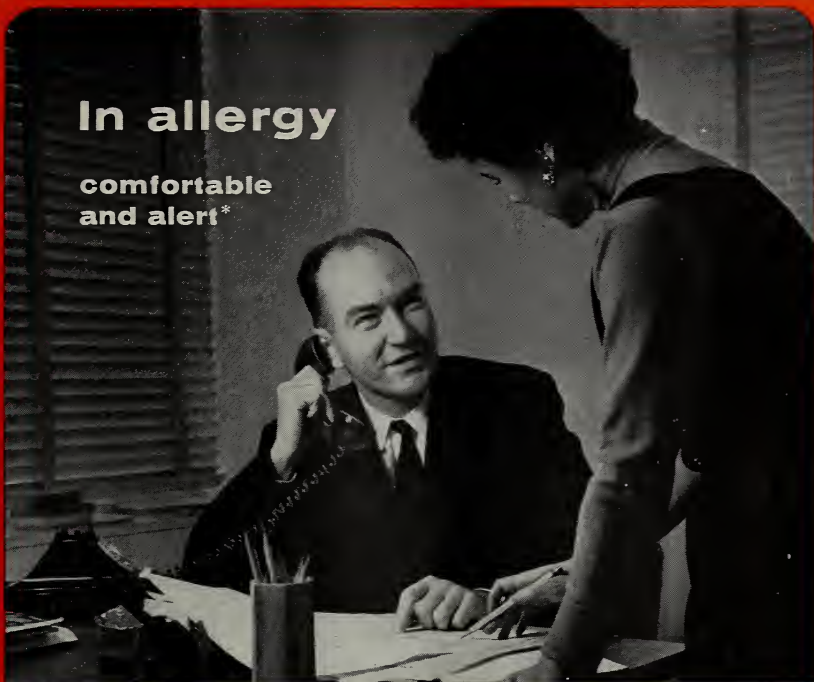
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Myleran Helps Relieve One Type of Leukemia

A relatively new drug, which can be taken orally by patients at home, has been found useful in treating one form of leukemia, according to a preliminary report made recently.

The drug, Myleran (trade name), was given to 10 patients with the granulocytic type of leukemia, a blood disease in which there is an enormous increase in the number of white cells.

John W. Frost, M.D., Philadelphia, and Capt. Carmalt B. Jackson, Jr., (MC), U.S.A.F., made the report in a recent issue of the *Journal of the American Medical Association*.

They said Myleran has several advantages over the usual x-ray therapy, including its ease of administration without requiring daily trips to the doctor's office, its apparent freedom from undesirable side effects, and its safety. The drug is also relatively inexpensive.

All the patients showed improvement, including a distinct feeling of well-being and an increase in appetite and strength within a short time after starting treatment. A gradual decrease in the total number of white cells occurred in from 20 to 50 days in all patients. Other signs of improvement included reduction in size and tenderness of the spleen and lymph nodes. There was also a rise in the level of hemoglobin in nine patients.

In three patients treatment continued until the disease activity apparently ceased, and was restarted only when relapse was evident. In the other seven patients lower maintenance doses were continued.

The authors commented that it is still too soon to assess completely the place of Myleran as a relieving remedy in chronic granulocytic leukemia, but the results in their patients confirm those reported by other physicians. Myleran apparently can be used as an initial agent in newly diagnosed cases and as alternative treatment in cases that fail to respond to x-ray treatment.

The study was supported by a grant from the U. S. Public Health Service.

Physician Population Increases by 3,800

Enough physicians to replace all the people in a town the size of Bisbee, Ariz., Powell, Wyo., or Pineville, Ky., were added to the total physician population of the United States in 1955, through the granting of licenses by examining boards.

The actual number of physicians receiving licenses for the first time in 1955 was 7,737, but if the nearly 4,000 physician deaths in 1955 are deducted, it leaves an increase of 3,800 in the total physician population.

This is about 450 fewer physicians than the 4,250

(Continued on Page 54)

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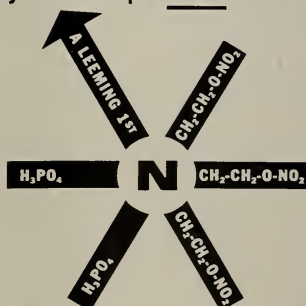
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Physician Population Increases by 3,800

(Continued from Page 50)

physicians added to the population in 1954, a record year, exceeded only by 1946.

The figures were published by the American Medical Association's council on medical education and hospitals in a recent issue of the *Journal of the American Medical Association*.

State and territorial boards issued 14,840 licenses during the year, but 7,103 went to doctors already holding licenses from another state or to men who took examinations in more than one state.

Of the 14,840 licenses issued during the year, 7,379 were by examination and 7,461 by interstate

reciprocity and other qualifications. The number issued by reciprocity and endorsement decreased by 741 from 1954, while the number issued by examination increased by 552. Most candidates who received licenses by examination came from 74 approved medical schools in this country and 11 in Canada. The rest were from foreign schools, unapproved schools, and schools of osteopathy.

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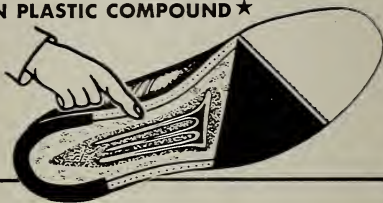
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Number 1

Aldosteronism Associated with Adrenal Cortical Adenoma

ORLYN B. PRATT, M.D., Los Angeles

TRUE ADENOMAS of the adrenal cortex are infrequently seen. Histologically they are composed of cells resembling one or more of the three types normally encountered in the adrenal cortex. Functional disturbances due to overproduction of specific hormones occur frequently in patients in whom cortical adenomas are found. It cannot be determined by histological examination if a given adenoma may produce any hormone in excess of normal. Overproduction of adrenocortical hormones may occur in the absence of adenoma with or without anatomic evidence of hyperplasia of the gland. The clinical manifestations will depend on the nature and quantity of hormones produced. Three classes of cortical hormones are recognized: (1) The sex hormones which influence the development of primary and secondary sex characteristics, (2) the corticoids which affect carbohydrate and protein metabolism, (3) the cortical hormones with pronounced effect on electrolyte and water metabolism.

In 1952, Simpson and Tait described a salt-retaining hormone secreted by the adrenal cortex, referring to it as "electrocortin."¹⁰ In 1954, Reichstein announced the chemical structure of this hormone and named it "aldosterone."¹¹ In 1950, Deming and Luetscher isolated a substance with similar properties from the urine of patients with nephrosis and congestive heart failure.⁶ Aldosterone is 20 to 30 times

• An electrolyte-regulating corticoid has been identified and given the name aldosterone. This hormone may be produced in amounts above normal in adrenal cortical tumors in hyperplastic adrenal glands and in normal appearing adrenal glands. Overproduction of aldosterone is accompanied by certain characteristic clinical manifestations which should suggest the diagnosis. The diagnosis may be supported by examinations available in most well equipped clinical laboratories. Bioassay of aldosterone in the urine and estimation of exchangeable body sodium and potassium, using radioactive salts, are necessary for confirmation of the diagnosis.

Since the description of this salt-retaining hormone by Simpson and Tait and the discovery of its chemical structure by Reichstein in 1954, reports of 14 cases have been published. Surgical removal of the offending tissue gives spectacular relief from the very distressing symptoms.

as potent as desoxycorticosterone acetate (DOCA) in reducing sodium excretion and it is five times as active as DOCA in enhancing potassium excretion.⁷ The mechanism which regulates the production of aldosterone is not known. The secretion of aldosterone appears to be affected little by hypophysectomy and is not enhanced by the administration of corticotropin (ACTH).⁸ The reverse is true of other corticoids.

Certain clinical conditions that are characterized by pronounced edema have been shown to be accompanied by increased excretion of aldosterone

Chairman's Address: Presented before the Section on Pathology and Bacteriology at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

in the urine. These conditions include nephrosis with edema,⁹ congestive heart failure,¹² decompensated hepatic cirrhosis,¹ and eclampsia.² Conn classified these conditions as examples of secondary aldosteronism.³ Primary aldosteronism is a clinical syndrome which results from increased production and secretion of aldosterone by the adrenal cortex. This overproduction of salt-retaining corticoids may come from an adrenal cortical neoplasm or may come from the adrenal cortex of an hypertrophied adrenal gland or a normal-appearing gland.

The clinical manifestations of primary aldosteronism as described by Conn include periodic severe muscular weakness, intermittent tetany, paresthesia, polyuria and polydipsia, hypertension, and absence of edema.⁴ The laboratory findings are hypokalemia, hypernatremia, alkalosis, normal blood calcium, and a low ratio of sodium to potassium in sweat and saliva. There is also an increase in the exchangeable body sodium and a decrease in exchangeable body potassium. Pronounced resistance to potassium repletion by oral or parenteral administration of potassium is characteristic. Another feature is hyposthenuria that does not respond to Pitressin (beta-hypophamine). The excretion of aldosterone in the urine is increased. The urinary 17-ketosteroids and the 17-hydroxycorticoids are normal and respond to corticotropin stimulation.

The cortical adenomas that produce excessive salt-retaining corticoids show no histological characteristics which help to distinguish them from other cortical adenomas. The cells are large and resemble those of the adrenal cortex. The cytoplasm is vesicular and is laden with lipid, and the nuclei are small and vesicular. The cells usually resemble those of the zona fasciculata, but there may be some cells resembling the other zones.

Conn described vacuolar changes in the renal tubular epithelium leading to focal necrosis and calcium deposit in some areas. He also noted a severe degree of renal arteriosclerosis in a biopsy specimen.

Thirteen cases of primary aldosteronism are referred to by Conn in a recent article, including one of the cases reviewed in this paper. The two cases here reviewed were studied by Crane and are being reported by him elsewhere.⁵ In ten of the fourteen known cases, the patient was cured by removal of an adrenal cortical adenoma, and one was cured by bilateral adrenalectomy. The remaining three cases were recognized after an adrenal cortical adenoma was noted at autopsy.

Following is a brief review of two patients with the disease who were treated at the White Memorial Hospital and Clinic during 1954 and 1955.

CASE 1. A 32-year-old white man was admitted to the White Memorial Hospital on November 21,

1954, with complaint of headaches and dry mouth of ten months' duration. He had been told by a physician that he had high blood pressure. Drugs had been given for hypertension and for headache but neither was relieved. The patient had had two episodes of weakness and syncope with sweating within the previous four months. He had had sporadic weakness of the arms or legs or both, lasting hours to two days, for the past four or five months. He complained of urinary frequency—urination one or two times at night and four to five times during the day. The volume of urine was greater at night, he thought, than during the day. There was no dysuria. The patient had been on a low sodium diet.

Upon physical examination the patient was observed to be well-developed and well-nourished, in no distress, and appearing to be the stated age of 32 years. The blood pressure was 190/120 mm. of mercury. A regular sinus rhythm and a grade three apical systolic murmur were noted on examination of the heart. The chest was clear. No masses or other abnormalities were noted in the abdomen. No significant abnormalities were noted in the neurological examination.

The specific gravity of the urine was 1.007. A phenolsulfonphthalein test was done and 55 per cent of the dye was returned in two hours. A urine concentration test resulted in a specific gravity range from 1.010 to 1.027. The urine volume ratio was day : night as 2 : 3. At no time was albumin detected in the urine. The blood nonprotein nitrogen was 37 mg. per 100 cc., the serum sodium was 152 mEq. per liter, the serum potassium was 2.1 mEq. per liter, and the carbon dioxide combining power of the serum was 40 mEq. per liter. The hemoglobin content and the erythrocyte count were within normal limits, as was the differential of leukocytes.

A test with phentolamine was negative for pheochromocytoma. A sodium amyltal test lowered the blood pressure from 200/120 mm. to 130/90 mm. of mercury, a decrease which was maintained for a two-hour period.

On diagnosis of essential hypertension, a left thoracolumbar sympathectomy was done November 23, 1954.

On the second postoperative day the serum sodium was 133 mEq. per liter, potassium 1.9 mEq. per liter, and calcium 9.1 mg. per 100 cc. Infrared recording of alveolar carbon dioxide was 47 mm. of mercury and the pH of arterial whole blood, determined at the same time, was 7.57. Because of the hypernatremia, hypokalemia and alkalosis at the time of the initial examination, attention was directed to adrenal function. A 24-hour specimen of urine contained 17.2 mg. of total 17-ketosteroids and 5.8 mg. of 17-hydroxycorticoids. Uropepsin excretion was 143 units in one hour.

The patient was released from the hospital on December 3 with prescription of 1 gm. of potassium chloride four times a day. He was readmitted to the hospital December 14, 1954, with complaint of palpitation on the slightest exercise and dryness of

the mouth. He had stopped taking potassium chloride two days before returning to the hospital. The blood pressure was 200/120 mm. of mercury and there was no change in the previously observed conditions on physical examination, nor significant change in results of blood examination or urinalysis since the previous hospitalization. The serum sodium was 146 mEq. per liter, the potassium content 2.1 mEq. per liter, and the carbon dioxide combining power was 40 mEq. per liter. A phentolamine test and a piperoxan test were negative for pheochromocytoma. The pulmonary carbon dioxide was 48 mm. of mercury and the arterial blood pH was 7.52.

On December 16, 25 mg. of corticotropin in 5 per cent glucose in 1,000 ml. of water were given by vein over an eight-hour period. The total 17-ketogenic steroids excreted in the urine in 24 hours increased to 64.4 mg. from the previous value of 5.8 mg. The circulating eosinophil count dropped from 699 per cu. mm. to 205, four hours after corticotropin was given. The urinary uropepsin excretion rate was 107 units in one hour (normal range, 15 to 40 units). On December 19, 1954, a right thoracolumbar sympathectomy was done and both adrenal glands were explored. The right adrenal gland appeared considerably enlarged. Approximately 80 per cent of the gland was removed. The specimen measured 6 x 3 x 2 cm. In a cross-section, a firm yellow circumscribed nodule 1 cm. in diameter was observed. The microscopic diagnosis was benign cortical adenoma of the adrenal gland.

On December 30, eleven days after adrenalectomy, the arterial blood pH was 7.48, the carbon dioxide combining power 32 mEq. per liter, serum sodium content 144 mEq. per liter, and serum potassium 3.1 mEq. per liter. A month later the arterial pH was 7.41, the carbon dioxide combining power was 28 mEq. per liter, the serum sodium 135 mEq., and serum potassium was 5.1 mEq. The urinary uropepsin was 30 units in one hour.

All the previously noted symptoms and abnormalities abated promptly following removal of the cortical adenoma of the adrenal, and the patient remained well thereafter. The blood pressure at the time the patient was discharged from the hospital was 148/108 mm. of mercury. On return visits it ranged from 110/60 to 120/70 mm. of mercury.

CASE 2. A 43-year-old white woman was admitted to the White Memorial Clinic February 17, 1955, with complaint of weakness of the lower extremities for four years and of the upper extremities for one month. The onset of the weakness had been gradual and it had spread from the legs to the thighs and then to the arms. On several occasions during the preceding two years the weakness had been so severe that the patient was unable to walk. Once she fell, causing minor injuries. The usual duration of an episode was one week, and the periods seemed to be getting longer. At no time was there paralysis. Dull aching and soreness in the muscles had been noted in the lower extremities, but pain in the arms

was minimal. During the preceding year the patient had had severe headaches which were relieved by vomiting. The headaches were not related to the episodes of weakness. There was a tendency for the ankles to swell toward the end of the day. At the age of 19 years the patient had been treated with iodine for goiter. For two years she had had hypertension but she believed that before that she had had low blood pressure. The patient said that she had had dry mouth and thirst for about six weeks before admittance and had been drinking 12 glasses of water daily. She urinated three to four times a night.

Upon physical examination the patient was observed to be well-developed, well-nourished, in no distress and appearing to be the stated age. The blood pressure was 170/100 mm. of mercury. The heart rate was in regular sinus rhythm and there were no murmurs. The size of the heart was normal. No abnormalities were noted upon examination of the abdomen or upon neurological examination. Examination of the blood on admission to the clinic (and again nine months later on admission to the hospital) showed the hemoglobin content, hematocrit, leukocyte content and differential of leukocytes all within normal limits. The specific gravity of the urine varied from 1.003 to 1.011 on five different visits. A concentration test gave a maximum specific gravity of 1.012. The dye return in a phenolsulfonphthalein test for renal function was 70 per cent in two hours. The protein-bound iodine was 5.2 micrograms per cent of serum. A phentolamine test was negative for pheochromocytoma.

The patient was seen about every two weeks in the clinic until her admission to the hospital on November 29, 1955. During that time the blood pressure ranged from 170/100 mm. to 220/120 mm. of mercury. With potassium hydrochloride taken by mouth, there were no more episodes of weakness, and thirst was almost completely relieved.

On eight specimens taken over a period of nine months the serum potassium averaged 3.2 mEq. per liter. The lowest was 2.7 mEq. and the highest 4.4 mEq. On the same specimens the serum sodium ranged from 149 to 152 mEq. per liter. The average of seven determinations of sodium-potassium ratio in the saliva was 0.21. On a normal subject the ratio was 1.64. On stimulation by chewing paraffin there was no increase in the concentration of sodium in the sputum. The sodium-potassium ratio in the sweat was 0.69 on one occasion and 0.42 on another. The serum chloride was 109 mEq. per liter. The alveolar carbon dioxide was 37 mm. of mercury and the simultaneous arterial pH was 7.44. The serum carbon dioxide combining power was 25 mEq. per liter. The exchangeable body sodium was 46.4 mEq. per kilogram of body weight (normal range 35.7 to 41.6), and the exchangeable body potassium was 31.6 mEq. per kilogram (normal range 38.5 to 54.4). These determinations were made with radioactive sodium and potassium.

The urinary excretion of 17-ketosteroids and 11-oxysteroids was normal and responded normally to stimulation with corticotropin. There was pronounced diuresis of water and sodium following the third day of corticotropin administration. On July 11 a bioassay for aldosterone in the urine was done by Conn. He reported 100 microgram equivalents of desoxycorticosterone acetate in 24 hours, which is within the upper limits of normal. The result of a similar test on November 30 was 200 microgram equivalents in 24 hours.

Uropepsin excretion was 20 units in one hour on one occasion and 42 units on another (normal range 15 to 40 units in one hour). On November 30 the uropepsin excretion rate was 79 units in 24 hours and 106 units in 24 hours on two trials.

On November 30, 1955, both adrenal glands were explored. The one on the right appeared normal. A mass 3 cm. in diameter was found attached to the left adrenal gland. The mass and three-fourths of the gland were removed. Biopsy specimens were taken from the left kidney and the liver. A portion of the rectus muscle was taken for chemical analysis. On subsequent chemical analysis of the muscle the sodium content was found to be 39.5 mEq. per kilogram and the potassium was 42 mEq. per kilogram (normal, 31 and 93, respectively).

About twelve hours after the operation the blood pressure dropped to 65/40 mm. of mercury. Lev-arterenol bitartrate, cortisone and 4 gm. of potassium chloride were given intravenously in one liter of 5 per cent dextrose in saline solution. The blood pressure rose to 132/96 mm. within one hour. Once more during the postoperative period the blood pressure dropped, this time to 80/50 mm. Again it responded promptly to therapy and then fluctuated from 120/80 to 170/110 mm. until the day of discharge from the hospital when it was recorded as 124/90 mm. The blood pressure thereafter remained within normal limits.

During the week following the operation the excretion of sodium was in excess of the intake, the sodium-potassium ratio in the saliva changed from 0.21 before operation to 0.64 and the serum potassium returned to normal. At the time of the latest report, January 23, 1956, the serum potassium was 5.1. There was no change in arterial pH, in alveolar carbon dioxide or in the carbon dioxide combining power of the serum, all of which had been within normal limits ever since the patient first came under observation. Before operation the maximum specific gravity of the urine during concentration tests was 1.012. After removal of the tumor it rose to 1.020. At latest report on the uropepsin excretion rate (March 5) it was 15 units in one hour.

The patient no longer complained of dry mouth, polydipsia and polyuria. Saliva flowed more copiously and the patient perspired more freely. She gradually regained strength and when last observed felt quite well.



Figure 1.—Section of tumor in Case 1, showing encasement in fibrous capsule. ($\times 1.5$)

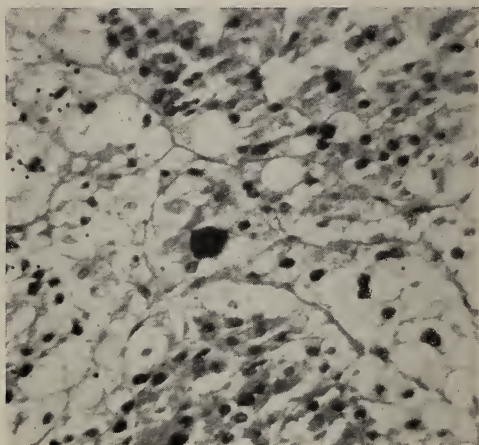


Figure 2.—Photomicrograph of section of tumor in Case 1. The cells resembled those of zona fasciculata in normal gland. ($\times 200$)

DISCUSSION

The clinical manifestations in these two patients were almost identical and were remarkably similar to those in the case reported by Conn. Both complained of headache, dry mouth, episodes of weakness, and polyuria. One patient had no edema, the other had minimal edema of the ankles at the end of the day. Both had hypertension with systolic pressures around 200 mm. of mercury. Serum potassium levels ranged from 2 to 3 mEq. per liter with an occasional finding higher. Serum sodium determinations were in the upper normal range or slightly higher. The urine volume was increased and the specific gravity was low in both, but in the first

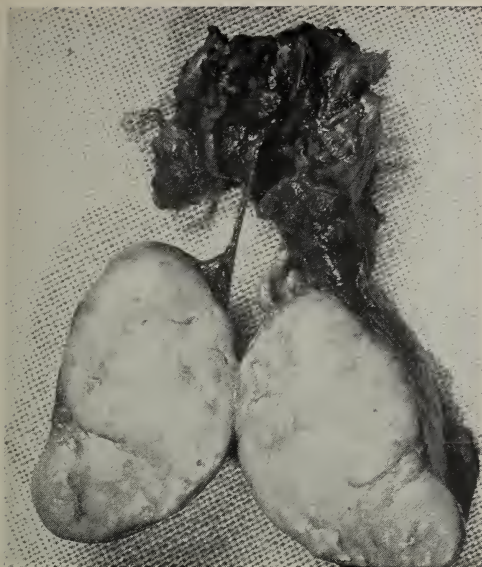


Figure 3.—Sectioned surfaces of tumor in Case 2 showing thin-walled capsule and attachment to adrenal gland by narrow pedicle. ($\times 1.5$)

case the specific gravity responded normally to the concentration test. In the second case the maximum specific gravity was 1.012 in the concentration test. The uropepsin excretion rate was increased in the first case, but in the second was normal on the first occasion and increased in a later test. There was metabolic alkalosis in the first case but not in the second.

Under corticotropin stimulation the excretion of 17-ketogenic steroids was increased. There was also a normal response in the total eosinophil count. The aldosterone excretion was not determined in the first case. Bioassay of urinary sodium retaining corticoids was done twice on the second patient. The first result was near the upper limit of normal, the second nearly twice normal.

Determinations of total body sodium and potassium were done only in the second case. There was a definite increase in exchangeable body sodium and a decrease in exchangeable body potassium. There was also a lowering of the sodium-potassium ratio in the saliva and sweat. There was an increase in sodium and a decrease in potassium in the muscle.

The prompt return to normal of all the clinical manifestations and laboratory findings following removal of the tumors indicates that these tumors were producing a hormone which was the cause of the disturbances.

The tumor in the first case was 1 cm. in diameter,

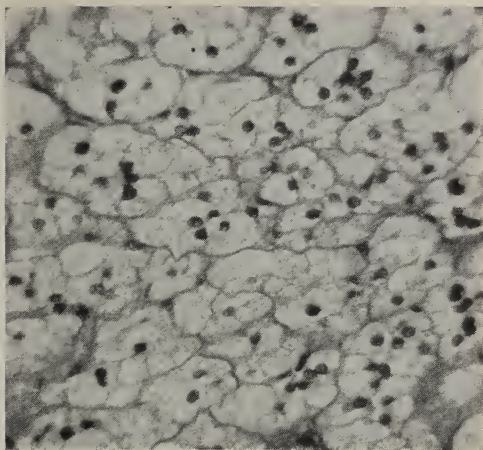


Figure 4.—Photomicrograph of section of tumor in Case 2. Cells bore striking resemblance to those seen in zona fasciculata. ($\times 200$)

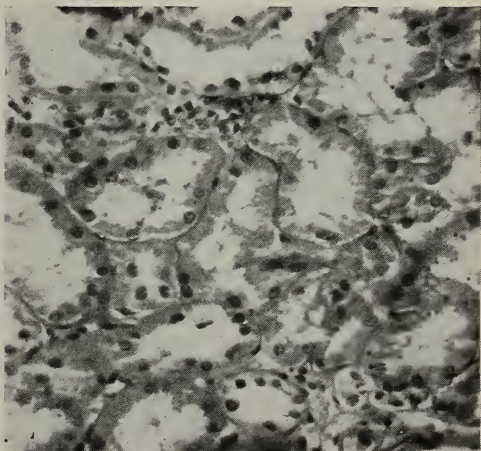


Figure 5.—Photomicrograph of biopsy specimen taken from left kidney in Case 2. ($\times 200$)

embedded within the adrenal gland and was well defined by a fibrous capsule. Arranged in small groups and columns, the cells were large with clear cytoplasm and distinct boundaries. They had dark nuclei which varied considerably in size. The cells resembled most closely those of the zona fasciculata of the normal adrenal gland (Figures 1 and 2).

The tumor in the second case was 3 cm. in diameter and was attached to the adrenal by a narrow pedicle. It was covered by a thin capsule. The cut surface was yellow. The tumor cells were arranged in small groups separated by narrow fibrous septa. It was composed of large polyhedral cells with well

defined cell boundaries. The cytoplasm was clear with large vacuoles. The nuclei were small and very uniform in size and staining characteristics. These cells bore a striking resemblance to those seen in the zona fasciculata (Figures 3 and 4). Figure 5 is a photomicrograph of the biopsy specimen from the left kidney in Case 2.

Patients with symptoms of hypertension, muscle weakness, thirst and polyuria should be studied with special attention to mineral metabolism. Clinical laboratories are generally equipped to make determinations of sodium and potassium on blood serum, urine, sweat and saliva. Serum calcium should be determined to differentiate weakness due to hypercalcemia. Tests for alkalosis should include carbon dioxide combining power and pH of arterial blood. To exclude respiratory alkalosis, alveolar carbon dioxide should be determined at the moment the arterial blood is drawn for the pH determination. Alveolar carbon dioxide can be easily determined with the infrared carbon dioxide analyzer which is available in pulmonary function laboratories.

It is desirable to check on other functions of the adrenal gland in the laboratory study of these patients. Urinary excretion of 17-ketosteroids and 11-oxysteroids and total eosinophil counts should be determined before and during the administration of 50 mg. of corticotropin twice a day for five days. All urine should be collected for the 24-hour period preceding the administration of corticotropin and each 24-hour period during the test. There should be a drop in the eosinophil count within four hours and a pronounced increase in these steroids on the fifth or sixth day after starting the corticotropin. In aldosteronism, pronounced diuresis of sodium may occur.

To rule out a pheochromocytoma as the cause of the hypertension, phentolamine, piperoxan hydrochloride and sodium amyl tests may be helpful.

For confirmation of the diagnosis of aldosteronism, bioassay of aldosterone in the urine can be done. It may be necessary to repeat this test if the

first result falls in the normal range. The exchangeable body sodium and potassium can be determined, using radioactive sodium and potassium salts. An increase in the excretion of aldosterone in the urine and an increase in exchangeable body sodium with a decrease in exchangeable body potassium should be demonstrated before a diagnosis of aldosteronism is considered confirmed.

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Electrocardiograms and Vectorelectrocardiograms

An Appraisal of Their Value in Subendocardial and in Transmural Myocardial Infarction

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THE ACCURACY of the electrocardiogram in the diagnosis of subendocardial and transmural myocardial infarction is well recognized. The use of three classical leads, six precordial leads and three unipolar limb leads will ordinarily detect 90 per cent of such myocardial insults.⁵ The purpose of this communication is to compare the clinical and electrocardiographic features of 27 cases of transmural infarction and 24 cases of subendocardial infarction, with particular emphasis on the value of vectorelectrocardiography.

Subendocardial infarction (acute coronary insufficiency) as defined by Master³ is a relatively mild clinical entity characterized by chest pain of short duration, with ST segment depression and T wave inversion in the electrocardiogram. Pathologically, a small area of myocardial necrosis is generally present.² Transmural myocardial infarction, clinically more well defined than subendocardial infarction shows abnormal Q waves and reciprocal ST deviation in the electrocardiogram. Vector methods (those of Simonson⁴) were chosen for this study because they permit quantitative expression of Q and T wave abnormalities. In anterior myocardial infarction, for example, the T vector shifts from its normal position to a degree proportional to the total area over which the T wave is inverted. Thus the change in the T vectors can be related to the extent of myocardial ischemia. In the same way, Q vector changes describe in a semiquantitative manner the area of myocardial necrosis.

In Simonson's method, a synthesis of the conventional 12-lead electrocardiogram is made by means of a simple mechanical device. The QRS and T complexes can each be represented by a single straight line in space, or mean spatial vector, having magnitude and direction. In this presentation the discussion will be focused upon changes in the direction of the T vector.

The clinical course in the 18 males and 6 females

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• By vector methods quantitative differences can be shown to be present between subendocardial and transmural myocardial infarction. In acute transmural infarction the vector shift occurs later, the degree of shift is greater, the return to normal is later in time and an abnormal vector shift remains more frequently than in subendocardial infarction. In acute anteroapical transmural infarction the degree of vector shift was closely correlated with the severity of the acute illness.

with subendocardial infarction was mild and no deaths occurred.¹ The attack was usually initiated by a short period of thoracic pain. In 17 of the 24 patients no precipitating factor was evident; in six of the seven cases in which there was a precipitating factor, unusual effort preceded the onset of acute pulmonary edema or mild congestive failure; the other patient had severe anemia. None of the patients was in shock. Leukocytosis was evident in three-fifths of the cases. The average hospital stay was ten days.

Of the 27 patients with transmural myocardial infarction, 20 were male, 7 female. Six patients developed congestive failure while in the hospital; for them the average duration of the hospital stay was 18 days. Leukocytosis was far higher in acute myocardial infarction, and there were four deaths in this group. In all cases the posthospital convalescence was more prolonged than in subendocardial infarction.

In subendocardial infarction the characteristic electrocardiographic abnormality was a depression of the ST segment accompanied by T wave inversion. These changes were most often seen in the precordial leads. The lesion was anterior in 18 of the 24 patients (anteroseptal in nine, anterolateral in eight and widespread anterior in one). Involvement of the lateral surface alone occurred in two patients; the lateral and posterior surface was affected in one case, and both the posterior and anterior surfaces in three others. In transmural myocardial infarction the distribution of lesions was somewhat different; in 11 patients the lesion was primarily anterior and in eight primarily posterior.

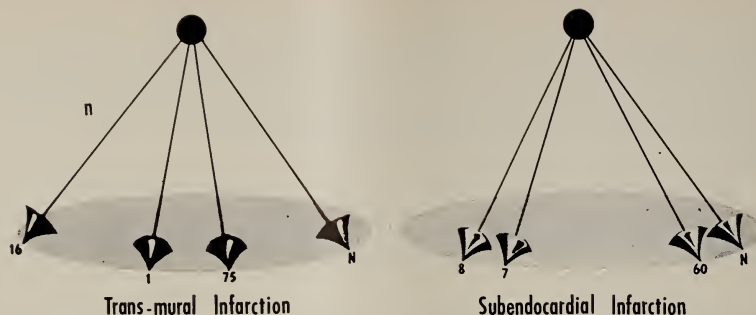


Chart 1.—Vectors in anterolateral involvement. (Numbers indicate days after onset.)

In one patient the lateral surface alone was involved, and four had involvement of both posterior and anterior surfaces.

The qualitative differences between subendocardial and transmural infarction have been mentioned. These are: (1) The presence of abnormal Q waves in transmural infarction and their absence in subendocardial infarction; and (2) the presence of reciprocal ST deviation in acute myocardial infarction. These two criteria, however, do not by any means describe the electrocardiographic differences clearly nor quantitatively. When the electrocardiograms were analyzed by vector methods, it was found that changes in the QRS vector were minimal and quantitatively unimportant, but that changes in the T vector were significant and characteristic in the two conditions.

In subendocardial infarction, the anterior subendocardial surface of the heart is the primary area involved. The electrocardiogram shows ST segment depression and T wave inversion early (during the first 48 hours) and the deepest T waves or lowest ST segments are usually present on the third to tenth day. Thereafter, the ST segment is less depressed and the T wave often returns toward or to normal, becoming stabilized in three to four weeks. Reciprocal ST changes are rare. It will be noted that these ST-T changes differ in time sequence from the classical changes of acute myocardial infarction. In transmural infarction, ST elevation is the rule, T wave inversion is greatest at about two weeks, and the T waves usually do not become upright or stabilized until the third or fourth month. Further, the inverted T waves in myocardial infarction are generally deeper, and they extend over a wider area than those in subendocardial infarction. It is these semiquantitative differences which are best expressed by vectorcardiographic methods.

The T vector in subendocardial infarction changes direction during the first 48 hours, turning away from the injured area, and by the third to tenth day assumes a posterior direction when the anterior sur-

TABLE 1.—Relation of Most Abnormal T Vector to Clinical Status in Anteroseptal and Posterior Myocardial Infarcts.

ANTEROSEPTAL AND ANTERIOR INFARCTION		POSTERIOR INFARCTION	
Horizontal T Vector	Severity of Attack	Vertical T Vector	Severity of Attack
—165	Severe	150	Mild
—165	Severe	139	Severe
—137	Severe	135	Severe
—127	Severe	128	Severe
—120	Moderate	126	Moderate
—115	Moderate	125	Moderate
—108	Moderate	120	Severe
—108	Mild	115	Severe
— 70	Mild	105	Moderate
		105	Severe

face of the heart is involved. During the next three to four weeks it returns to the normal anterior direction as the T waves in the precordial leads rise to or toward the normal. By contrast the T vector in transmural infarction "turns" toward the posterior surface of the heart more slowly, does not reach its final position until the end of the second week, usually turns through a wider angle (deeper T waves in infarction), returns to or toward the normal more slowly, and finally returns to a completely normal position less often than in subendocardial infarction. In each case, vectorelectrocardiographic changes offer a concise and semiquantitative description of the electrocardiogram.

Chart 1 shows the T vectors in typical cases of anterolateral infarction, transmural and subendocardial. In subendocardial infarction, the T vector soon reaches its most abnormal position away from the injured area and returns toward the normal much earlier than in the case of transmural infarction. Also, the maximum shift of the T vector is far greater in transmural infarction than in subendocardial.

Table 1 relates the maximum T vector shift in the two largest groups with myocardial infarction to the severity of the clinical course. The severity of the attack in each case was evaluated independently

of any knowledge of the vector shift. There is almost perfect correlation between vector shift and severity of illness in the anteroseptal infarcts, but no correlation at all in the posterior group. In this small series, it would appear that the degree of vector shift is a rough measure of the area of involvement in the anteroseptal group. In posterior infarction, however, there is usually some extension onto one of the other surfaces of the heart, and the T vector shift is therefore a result of a combination of forces. In subendocardial infarction, the illness was usually too mild to permit any correlation with the T vector shift.

In a review of the literature no report could be found of any careful autopsy study of the correlation between infarction size and number of abnormal precordial leads. The striking relationship between severity of illness and extent of precordial lead T wave changes in the present small group of patients with anteroseptal infarct is therefore worthy of emphasis.

In the method used in this study, the complex T wave patterns of the multiple-lead electrocardiogram are replaced by a single vector. Changes in the T waves over the course of time are characterized by changes in the direction of this vector. In cases of transmural infarction and subendocardial infarc-

tion, salient differences between the two conditions have been pointed out. These differences are quantitative, and relate to the time-course and degree of shift in the T vector. In subendocardial infarction the vector shift occurs earlier, the degree of shift is less, the vector reaches its most abnormal position sooner, returns to the normal more quickly, and achieves a normal position more frequently, than in transmural infarction. Finally, the degree of vector shift was found to be closely correlated with severity of the acute illness in a small series of patients with anteroseptal infarcts.

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Massive and Recurrent Hernias

Use of Dermal Grafts in Carrying Out Repair

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FREQUENTLY in massive and recurrent hernias the tissues are so weakened and attenuated that some reinforcing material must be added for adequate repair. Various foreign materials such as bovine fascia, metallic plates and filigrees have been used, but an autogenous graft offers the advantages of continuing as an integral viable portion of the host. Dermis, whole skin and fascia have each been used for these autogenous grafts with varying success. Clinical and experimental studies have reported several advantages of grafts with dermis over grafts of other types, but the more widespread use of dermis has been delayed by technical difficulties in securing the dermis. The present report concerns two new techniques to facilitate obtaining dermal grafts, and additional experimental and clinical evaluation of the use of those techniques.

Dermis was first introduced as a reinforcement for hernias in 1913 by Loewe,¹ and since then it has been used by a number of surgeons with generally favorable results. However, the techniques of obtaining the dermis were inexact and time-consuming and this led Mair^{2,3} to introduce the use of whole skin in 1945. In the use of whole skin, Mair relied on the clinical observations of Rehn and Uihlein that placement of a dermal graft under tension exerted an influence in preventing the development of cysts. Placement of the grafts under tension enabled Mair and others to utilize whole skin with a minimum of difficulty but clinical evidence of the tissue reaction to whole skin was noted by Strahan⁶ who in a series of 413 cases of whole skin grafts used in herniorrhaphy kept the patients on strict bed rest for three weeks because of "the considerable reaction noted in most cases up to well over two weeks." Preliminary removal of the superficial epidermis from the dermis obviates the slough of this layer, and its attendant reaction. In a previously reported controlled experimental study⁵ of a series of 25 dogs on the comparative merits of whole skin and dermal grafts in the repair of hernias, the appearance of gross cysts in implanted whole skin was reduced from 80 per cent when implanted without tension to 45 per cent when implanted with ten-

• Graft of dermis is clinically and experimentally superior to graft of whole skin for use as reinforcement at the site of repair of hernia, for gross cysts do not form and it fuses better with the surrounding tissues than does whole skin. Placing either dermis or skin under tension helps prevent cyst formation and aids fusion with surrounding tissues. Dermal grafts are less liable to infection than are whole skin grafts, either at the time of operation or later.

A split-split flap dermatome technique is presented as a preferred technique for obtaining a dermal graft from the thigh in cases of ventral hernia in which the abdominal skin is stretched, attenuated and inelastic because of the massive size of the hernia. This technique was used in 27 cases of massive hernia. There was infection in one case of the 27 and subsequent healing was satisfactory. One patient died of spontaneous rupture of an intracranial carotid aneurysm. Hernia did not recur in any patient.

A split-split free graft dermatome technique is presented for use in cases in which an elliptical segment of normal skin can be removed adjacent to an inguinal or thoracic incision for repair of a hernia or other use. This technique was used in seven cases of inguinal hernia and in one of diaphragmatic hernia with satisfactory results.

sion. The implantation of dermal grafts in the same animals produced no gross cysts, but in 40 per cent of dermal grafts without tension, minute cysts were observed on microscopic study of the grafts. Thus the importance of tension is clearly shown, as is the superiority of dermis over whole skin. Another important finding of the study was the frequent occurrence of nonunion of the whole skin with adjacent tissue due to the sequestration of the superficial epithelium, as contrasted to the firm fusion which rapidly occurred between dermal grafts and surrounding tissues.

During the previous study it was noted that with nonunion there was also necrosis of the tissues in a proportionate degree. This was borne out in another study in which cultures were taken of implanted dermal and whole skin grafts. A series of ten large nonpregnant mongrel dogs was used and a graft of different type was placed in each of the four abdominal quadrants of the animals. Dermal grafts, one with and one without tension, were placed in two of the quadrants and whole skin grafts

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also with and without tension in the other two quadrants. Cultures were then taken under sterile conditions after varying intervals of from one to five months. In the first five dogs an incision was simply made across the center of each graft and sterile swabs were drawn across each site. Both aerobic and anaerobic cultures were made. In each instance, if the graft had completely fused, the cultures were sterile, but with the presence of gross necrosis or cyst formation there was invariably a mixed bacterial growth on cultures. All the dermal grafts implanted with tension were sterile on culture. Six of the ten dermal grafts without tension were sterile. Only two of the ten whole skin grafts under tension and none of the whole skin grafts sutured without tension were sterile. In the last five dogs, small pieces of each of the grafts were removed for biopsy under sterile conditions and were weighed in autoclaved vials. The specimens were then crushed and ground with a sterile glass rod in a beef broth culture with washed and autoclaved sand in the bottom to aid in the grinding. Transfers were then made to culture plates. Although the whole skin implanted without tension appeared grossly to have the greatest infection, no quantitative statistical confirmation of this was accomplished by this means. However, the dermal graft implanted under tension was the only one of the four grafts in which there was no infection. Upon examination of the abdominal wall of the animals four months after implantation of the grafts, intimate fusion of the dermal grafts implanted under tension was noted, but the dermal grafts implanted without tension were less firmly fused. The whole skin grafts, both with and without tension, had incomplete fusion and cultures of material from both types had bacterial growth.

To test the initial bacterial status of dermis and surgically prepared whole skin, five specimens of fresh unimplanted dermis were ground with aseptic precautions and four of these were sterile to culture. There was mixed bacterial growth on the fifth. With whole skin which was prepared by a three-minute application of tincture of green soap, followed by alcohol, ether, tincture of zephiran and finally a second application of ether to remove all the antiseptic materials, all five specimens gave a positive mixed culture. From the foregoing it was concluded that dermis has a high percentage of initial sterility and appears to maintain this sterility especially when implanted with tension which aids early fusion to the surrounding tissues, and that whole skin was unsterile in spite of thorough surgical preparation. When implanted with tension, some of the whole skin grafts fused and apparently all bacteria were assimilated. However, the occurrence of necrosis of the epidermis and formation of cysts, especially in

those implanted without tension, predisposed to a high incidence and frequent recurrence of bacterial growth. When biopsy of five human dermal grafts implanted under tension was carried out at various intervals of from one day to 34 months after the graft was done, no cysts were noted in any of the cases and even 34 months later the dermal graft was present as a viable part of the surrounding tissues with a good supply of blood. Studies of tension of fresh human dermis as well as that obtained on the eleventh postoperative day revealed that the dermis maintains a high degree of multidirectional strength, whereas human fascia is only strong in one plane and is inferior to dermis even in this plane. Tension-metric studies revealed that 90 per cent of the strength of skin lies in the dermis. Hence, removal of the superficial epidermis does not much impair the strength of the tissue. (In nonmedical fields the dermis—leather—finds a greater application than either whole skin or fascia because of these same inherent properties.)

The previously cited advantages of dermis are believed by some investigators to be at least partially offset by the greater ease with which whole skin is obtained. However, dermal grafts can be obtained with a minimum of difficulty. The original technique of Loewe was to remove the full thickness skin with a scalpel, and then to scrape off the superficial epithelium with a sharp instrument much as a housewife cleans a carrot. This technique was not entirely satisfactory, as it gave a dermal graft which had very irregular upper and lower surfaces. An improvement was reported by Rehn⁴ in 1914: He removed a Thiersch graft prior to removing the dermal graft from the underlying site with a scalpel. In 1939 Uihlein⁸ reported Rehn's further modification in which the dermis was cut from a portion of the excised redundant skin. This technique eliminates the closure of a secondary donor site but is not often useful in a ventral hernia, for the skin is frequently thinned, atrophic, and inelastic over the hernia site. In 1943 Swenson and Harkins⁷ reported the use of a dermatome to remove the epidermis following which the dermis was excised with a knife, and subsequently Harkins used Zintel's⁹ method of resplitting a free skin graft to remove the superficial epithelium.

The first of the two techniques herein reported leaves an attached superficial epithelial skin flap which facilitates resuturing it to the donor site as compared with the detached graft technique. The second technique can be used if the skin appears normal in the area of incision. In this instance a free graft splitting technique is used. With each of these two techniques a uniform graft is obtained, with both surfaces smooth and regular.



Figure 1.—Split-split flap dermatome technique. Dermis (D) being held up after separation from the subcutaneous fat (F) by the first cut, and from the epidermis (E) by the second cut.

SPLIT-SPLIT FLAP DERMAL GRAFT TECHNIQUE

No elaborate preoperative preparation of the donor site on the thigh is done. The area is shaved, and immediately before operation the skin is washed with soap and water for three minutes. Then alcohol, ether and tincture of zephiran are applied. Ether is then used a second time to remove the zephiran. The drum is cleansed with ether and the blade is set at 34 thousandths of an inch from the drum for an adult and 22 thousandths of an inch for a child. Glue is applied to both the dermatome and the donor site and permitted to dry for five minutes. An important point in this regard is to apply glue on the leading edge of the drum so that when the drum is placed in contact with the donor site, skin will overlap the edge. This position is held for one minute before making the initial incision which separates the deep surface of the dermis from the subcutaneous fat. The blade is then drawn back to within one-fourth inch of the starting point, with care taken not to draw the blade back over the starting edge of the flap. The knife is then lowered to 10 thousandths of an inch from the drum for children and to 12 thousandths for adults, and a second cut is made (split-split) separating the upper portion of the dermis from the superficial epidermis as shown in the inset of Figure 1. The base of the dermal flap is then cut off (as depicted by the dotted line in the same figure). A warm moist saline pack is placed over the subcutaneous fat to control bleeding. The superficial epithelium which is still attached to the thigh is then replaced in position and the remaining three sides of the flap then resutured with

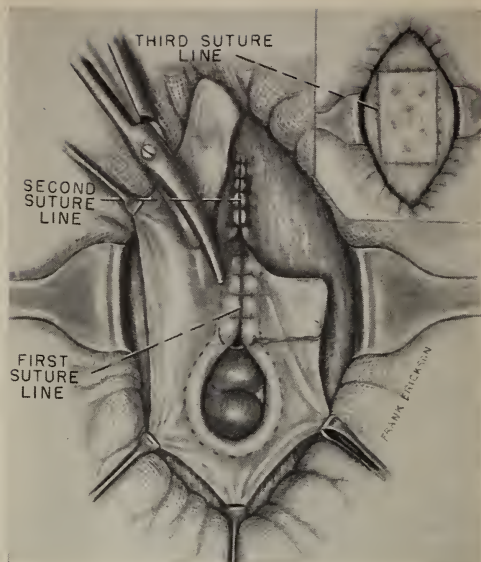


Figure 2.—Technique of repair of massive abdominal hernia with first suture line being closure of hernial ring from inside the sac. Second suture line is the approximated peritoneal edges of the sac. Third suture line is formed by the dermal graft with sutures over the surface as shown in the inset.



Figure 3.—Elliptical segment of skin adjacent to old herniorrhaphy incision is excised to obtain a source of dermis for repair of recurrent hernia (inset). Deep layer of skin is separated from subcutaneous fat by sharp dissection.

interrupted 0000 silk, and ointment gauze, sterile fluffs and an elastoplast pressure dressing are applied.

The dermal graft obtained by this technique is uniform in thickness and smooth on both surfaces. It is used as a reinforcement of a previously executed herniorrhaphy in which the simple repair is

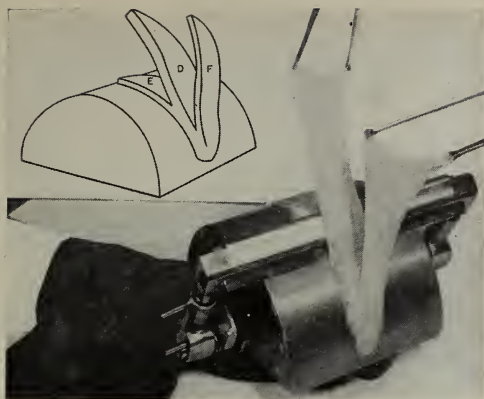


Figure 4.—Split-split free dermal graft technique. The skin ellipse has been separated into subcutaneous fat (F), dermis (D) and epidermis (E) by the two cuts.

not thought to be adequate by itself. In massive ventral hernias an elliptical incision is made, excising the old scar and excess skin. The lateral skin flaps are freed, exposing the fascia, which is dissected clear for at least one inch surrounding the hernial ring. The sac is opened and the contents are freed and reduced. The abdominal wall layers surrounding the hernial ring are frequently fused into a thin layer and any attempt to separate them for a closure in layers is unsatisfactory and further weakens the area. Hence, the closure is done in one layer from inside the sac with interrupted silk. This first suture line (Figure 2) includes the hernial ring and the inner surface of peritoneum. The excess sac is removed and approximation of the peritoneal edges constitutes the second suture line. The dermal graft is then placed over the closure and at least one inch of surrounding fascia and sutured under tension, using interrupted nonabsorbable sutures. Additional interrupted sutures are placed through the surface of the graft to aid in approximation to underlying tissues. The graft then (Figure 2, inset) represents the third suture line. The subcutaneous tissues are sutured down to the graft to obliterate all dead space. Sterile compressions dressings are applied to the abdomen to complete the operation.

This technique was used in 27 cases of massive hernia and the patients have been observed for varying intervals up to five years. In all these cases the ring was at least 4 cm. in circumference and the capacity of the sac was 500 cc. or more. Five were ventral (incisional) hernias, ten inguinal hernias, one congenital ventral hernia (omphalocele) and one diaphragmatic hernia. The one infection in the series occurred after a small subcutaneous seroma was mistakenly treated by partially reopening the

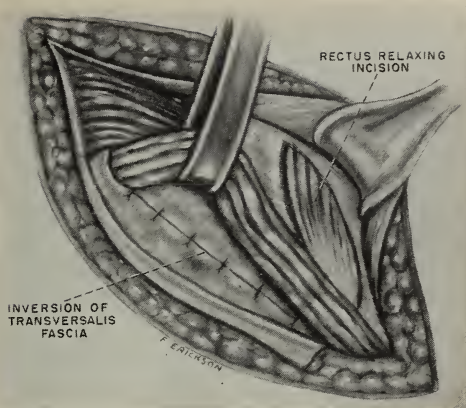


Figure 5.—A relaxing incision is made in the rectus fascia near the junction of the internal oblique to the external oblique and the transversalis is inverted and sutured up to the internal inguinal ring.

incision instead of aspirating the fluid. Subsequent healing was satisfactory. One patient died of spontaneous rupture of an aneurysm of the internal carotid artery on the eleventh day after operation. There were no recurrences of hernia in the series.

SPLIT-SPLIT FREE DERMAL GRAFT TECHNIQUE

For large recurrent direct inguinal hernias, an elliptical skin segment of normal skin can usually be excised adjacent to the old incision, and a dermal graft then is obtained from this segment by the split-split free dermal graft technique. This technique can also be used to obtain a dermal graft at other sites where the skin is grossly normal. In the inguinal area the skin ellipse is cut from the subcutaneous fat as shown in Figure 3. Glue is then applied to the superficial surface of the skin ellipse and to the dermatome. The skin is applied to the dermatome and the initial incision is made at a depth of 40 one-thousandths of an inch. The blade is then drawn back and lowered to 12 one-thousandths of an inch from the drum prior to the second cut. The skin ellipse has therefore been split into subcutaneous fat, dermis and epidermis as shown in Figure 4.

The dermal graft is used as a reinforcement of a Cooper ligament hernia repair. A relaxing incision is made in the rectus fascia near the junction of the internal oblique to the external oblique and the transversalis is inverted and sutured as shown in Figure 5. The "conjoined tendon" is then sutured down to Cooper's ligament up to the femoral vein and lateral to this to the inguinal ligament, as shown in Figure 6. The next step is to suture the dermal graft to the pubic tubercle, the rectus and internal

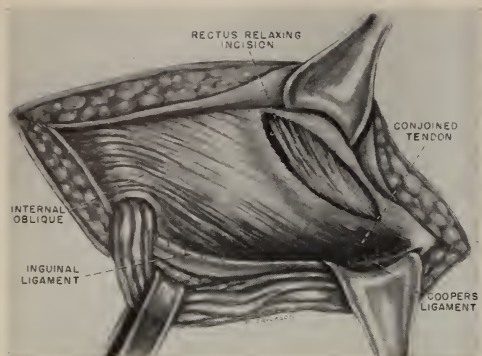


Figure 6.—The “conjoined tendon” is sutured down to Cooper’s ligament up to the femoral vein and lateral to this to the inguinal ligament.

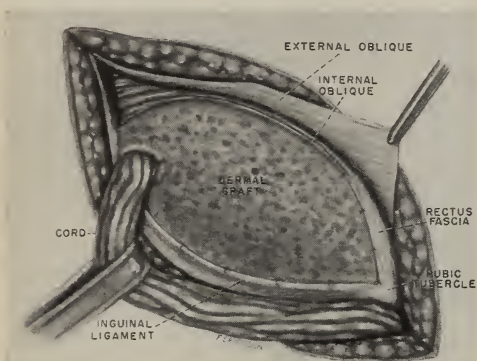


Figure 7.—Dermal graft shown sutured under tension to the pubic tubercle medially, the rectus and internal oblique fascia superiorly, and the inguinal ligament inferiorly. Multiple stitches over the surface assure approximation to underlying tissues. The cord emerges subcutaneously, through an incision at the upper end of the graft. The aponeurosis of the external oblique is then approximated over the dermal graft, with the cord remaining subcutaneous.

oblique fascia and the inguinal ligament, with the cord lying superficial to the graft. An incision is made near the upper end of the graft for emergence of the cord from the external ring, and the two ends

of the graft are then reapproximated about the cord so as to fit snugly but not strangle the cord. Multiple stitches are then placed over the surface of the graft to assure a firm approximation to the underlying tissues as shown in Figure 7. After that, the aponeurosis of the external oblique is approximated over the dermal graft and the cord is brought out subcutaneously as in the Halsted herniorrhaphy.

This technique was used in seven cases. The period of observation after operation was from two to three years and the results were satisfactory.

A similar dermal graft technique was used in a paraesophageal diaphragmatic hernia in which the diaphragm was thinned and weakened adjacent to the hernia site. The dermal graft used for reinforcement was obtained by this technique from an elliptical segment of skin adjacent to the thoracotomy incision. The results were satisfactory when the patient was observed four months after operation. This same technique has been used to prepare dermal grafts for other purposes, including animal experimental work; it is useful in preparing dermis for any of the variety of uses for which it is suited.

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Clinical Recognition of Chronic Pyelonephritis

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AS A RESULT of the studies of Weiss and Parker¹⁸ and others,^{12,13,15} chronic pyelonephritis has been recognized by most authorities as an important cause of the clinical syndrome of chronic Bright's disease, with renal insufficiency, albuminuria and, in certain cases, hypertensive vascular disease. It has been noted that this disease may progress to an advanced stage in the absence of any recognizable episode of urinary tract infection, and that in the advanced stage it frequently cannot be readily differentiated on the basis of examination of the urine from other diseases causing chronic renal insufficiency.^{13,15} Hence it is conceivable that many cases go unrecognized for long periods and that renal abnormalities, when noted, may be attributed to other forms of renal disease, especially chronic glomerulonephritis and nephrosclerosis.

Identification of pyelonephritis, especially in the early stages, would be of value for several reasons. First, a subacute or early chronic case might be recognized and treated before it reached an irreversible and progressive stage. (The optimum program of specific therapy, assuming that sources of urinary stasis and other predisposing causes are controlled, has yet to be worked out; it might in some cases resemble that required for the cure of bacterial endocarditis. In other cases, where permanent anatomic changes are too far advanced to permit healing, periodic specific therapy might delay the progress of the disease.)

Second, in cases in which the clinical findings are most prominently those of hypertensive vascular disease, it would be worth while to determine how the presence of underlying pyelonephritis might modify the course of the hypertension and the response to medical and surgical hypotensive therapy, in comparison with cases of essential hypertension. It may be that the tests performed in the usual pretreatment survey of a hypertensive patient are inadequate to discover all cases of primary renal disease. Furthermore, when renal abnormalities are found, the assumption is often made that the hypertension is the primary disease and the renal changes are secondary. Diagnosis is especially difficult in patients with "healed" pyelonephritis, who, as Weiss and Parker¹⁸ observed, may go on to develop hyper-

• In five cases of chronic pyelonephritis herein described, fulfilling the pathologic criteria established by Weiss and Parker, the diagnosis was not established until autopsy or until the patient had reached a terminal uremic state.

Improvement in the clinical recognition of pyelonephritis at all stages would be of value in improving the results of specific therapy, in clarifying the relation of pyelonephritis to hypertension, and in establishing what conditions, in addition to urinary stasis, may predispose to pyelonephritis.

The clinical situations in which pyelonephritis should be suspected are discussed, and diagnostic criteria based upon examination of the urine, pyelograms, renal function studies, and renal biopsy are described and their limitations discussed.

tension and renal impairment despite apparent healing of the renal inflammatory process.

Smithwick and Castleman,⁷ in reporting conditions observed on renal biopsy in cases of hypertension in which sympathectomy was done, mentioned that changes associated with chronic pyelonephritis were present in a few cases. However, it is recognized that such sections may not be representative of the whole kidney. Saphir and Taylor,¹⁶ using the criteria set forth by Weiss and Parker, concluded that there was evidence of a significant degree of chronic pyelonephritis in the overwhelming majority of cases of malignant hypertension studied at autopsy. Because of the insidious onset in these cases, they used the term "pyelonephritis lenta" to distinguish cases of this type from the more readily recognized "destructive pyelonephritis." Weiss and Parker¹⁸ and Platt and Davson¹⁵ considered chronic pyelonephritis to be a frequent cause of the syndrome of malignant hypertension, although not in such preponderance as reported by Saphir and Taylor. Bell,¹ on the other hand, reached the conclusion that, in the absence of complications, pyelonephritis was only infrequently associated with hypertension.

Third, although the importance of urinary tract stasis in the development of acute and chronic pyelonephritis has been well demonstrated, the question as to whether there are important systemic predisposing conditions has not been intensively explored. For example, the fact that certain forms of chemical injury to the kidney may predispose to pyelonephritis is suggested by the fact that the pathologic

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changes of chronic pyelonephritis have been found in cases of azotemia associated with prolonged intake of calcium and alkali¹⁶ and in cases of so-called gouty nephritis.⁸ In such conditions, more active investigation might be made for evidence of pyelonephritis so that treatment might be given when necessary.

The difficulties involved in the clinical recognition of chronic pyelonephritis are reflected in the cases described in following paragraphs. The patients were adult males who died in renal insufficiency and in whom the diagnosis of chronic pyelonephritis was substantiated at autopsy using the criteria of Weiss and Parker.¹⁸ Urinary stasis was not a prominent feature. Bilateral disease was present. The cases were selected as typical examples from a larger group in which there were similar findings.

The criteria of healed pyelonephritis include the presence of colloid casts in the tubules, infiltration of intertubular tissue with lymphocytes and plasma cells, periglomerular fibrosis and inflammation of the pelvis and renal capsule. In the presence of pyelonephritic activity, there may be polymorphonuclear leukocytes in the tubules and interstitial tissue, and sometimes abscess formation.¹⁸

Vascular and glomerular changes when present are most intense in the areas of scarring. Glomerulonephritis is ruled out by the presence of many normal glomeruli.

REPORTS OF CASES

CASE 1. A 44-year-old man was hospitalized on February 3, 1949. He was known to have had hypertension since 1944. For six months he had had dizziness, headache and blurred vision; for three months dyspnea, weakness and edema at the ankles; for two weeks nocturia. He had formerly been very obese. He had had gonorrhea.

On physical examination the patient appeared dyspneic and acutely ill. The blood pressure was 230/160 mm. of mercury. Grade 4 retinopathic changes were present in the optic fundi. The heart was enlarged to the left. There was a Grade 2 systolic murmur, and a gallop rhythm was transiently heard. Rales were present at both lung bases. The liver was palpable two fingerbreadths below the costal margin. There was three plus edema at the ankles.

The hemoglobin value was 53 per cent of normal and erythrocytes numbered 3.1 million per cu. mm. Specific gravity of the urine ranged between 1.003 and 1.013; albumin content ranged between a trace and four plus; there were 15 to 20 leukocytes and 5 to 10 erythrocytes per high power field, and occasional granular casts were seen. The blood urea nitrogen was 18 mg. per 100 cc. at the time the patient was admitted to hospital, and a few weeks later it was 28 mg. and the creatinine content was 2.2

mg. per 100 cc. An electrocardiogram showed left ventricular hypertrophy. Generalized cardiac enlargement was observed in an x-ray film of the chest. Only partial visualization was obtained by an intravenous pyelogram but no abnormality was seen in the visualized part.

The patient was treated with bed rest, sodium restriction, diuretics and sedatives. On April 8, 1949, right transpleural thoracolumbar sympathectomy was done. Several blood transfusions were administered. Postoperative blood pressure averaged around 180/120 mm. of mercury. Gradually congestive failure increased, and minor convulsive movements, weakness and lethargy developed. The spinal fluid pressure was found to be elevated. By May 4, the blood urea nitrogen had risen to 84 mg. per 100 cc. (creatinine 7 mg. per 100 cc.). The patient became comatose, uremic frost developed, and death occurred on May 8, 1949. The final clinical diagnosis was essential hypertension, severe, with renal insufficiency.

The kidneys weighed 300 gm. and were of equal size. The capsule was adherent. Upon microscopic examination the following changes were observed in over 80 per cent of areas examined; flattened tubular epithelium with colloid casts in their lumina; dilatation of tubules; parenchymal atrophy with fibrosis and lymphocytic infiltration of interstitial tissues; and, in the tufts of some glomeruli, swelling and cellular proliferation, with foci of necrosis. Arterioles, especially in areas of scarring, showed hyperplastic lamellar collagen concentric thickening and fibrinoid necrosis. No anatomic changes of the excretory urogenital tract, seminal vesicles or prostate were observed. There was generalized systemic visceral arteriosclerosis, and the heart was hypertrophied and dilated.

Comment: The patient entered with progressive "malignant hypertension." He was considered to have nephrosclerosis secondary to essential hypertension. The anemia present upon admission suggests, however, that renal disease may have been present for some time. Closer study of the patient before the disease entered a malignant phase would have been most helpful in clarifying the relationship of the renal disease and hypertension. The pathologic findings are consistent with those described by Weiss and Parker in "healed" pyelonephritis and by Saphir and Taylor in "pyelonephritis lenta."¹⁶

CASE 2. A 23-year-old airman, admitted to hospital July 21, 1953, had been in good health until six months before, when a sore throat developed and was followed by malaise, fatigue, loss of weight and puffiness of the eyes. A few months later nocturia developed. One week before admission pronounced weakness, dyspnea, nausea and vomiting began. There was a history of some exposure to carbon tetrachloride during the preceding year.

On physical examination the patient appeared acutely ill. Respirations were rapid and labored and

the blood pressure was 160/96 mm. of mercury. The optic fundi showed Grade 2 retinopathic changes. The heart was enlarged and there was a friction rub. One plus edema of the ankles was noted.

The hemoglobin content was 5.8 gm. per 100 cc. of blood and erythrocytes numbered 1.7 million per cu. mm. Packed cell volume was 16 per cent of the whole blood. Leukocytes numbered 13,000 per cu. mm.—90 per cent polymorphonuclear cells. Urinalysis showed specific gravity between 1.005 and 1.008; reaction for albumin four plus; many erythrocytes and leukocytes. The blood urea nitrogen was 148 mg. per 100 cc. (creatinine 23 mg. per 100 cc.) The carbon dioxide combining power was 5.6 mEq. per liter, serum sodium was 130 mEq. per liter, serum calcium 4.6 mg. per 100 cc., and serum potassium 6.7 mEq. per liter. The electrocardiogram was compatible with hypocalcemia and hyperkalemia. Pronounced cardiac enlargement was noted in an x-ray film of the chest.

The patient continued to be gravely ill, had occasional tetany and excreted about 1,000 cc. of urine daily. He was given digitalis, measured amounts of fluids parenterally, and calcium intravenously. He improved temporarily, then he became comatose and died. The final clinical diagnosis was chronic glomerulonephritis.

On postmortem examination, each kidney weighed 35 gm. The renal surfaces were delicately granular and scarred. There was widespread fibrosis and chronic inflammatory reaction, almost totally obliterating normal structures. Many glomeruli were obliterated and sclerotic; some showed congested capillaries and epithelial and endothelial proliferation; many showed periglomerular lamellated fibrosis, while many were normal. The remaining tubules were either dilated or atrophic; many were filled with colloid casts and showed flattened epithelium; many were filled with pus cells. The renal pelvis were not dilated and showed submucosal fibrosis and inflammation. Other anatomic findings were myocardial hypertrophy, pleural and pericardial effusion and ascites, and pseudomembranous ulcerative colitis.

Comment: The remarkable feature of this case was that the symptoms were mild and indefinite and did not attract medical attention until the terminal uremic phase of the disease. The clinical history was somewhat suggestive of glomerular nephritis with a subacute course. Here again, knowledge of the clinical findings in the early stages would have been informative, because early recognition and treatment of cases of this type would appear to be a matter of considerable urgency.

CASE 3. The patient, a 23-year-old man was hospitalized for the final time on August 13, 1953. In 1945 he was discharged from military service because of the finding of albuminuria and hypertension. He had nocturia dating from about that time. He had had circumcision because of phimosis

while he was in the service. In 1952 headaches, vomiting and fatigue developed and the patient was hospitalized for the first time. Upon physical examination at that time the blood pressure was noted to be 180/130 mm. of mercury, and Grade 2 retinopathic changes were noted. The hemoglobin was 13.4 gm. per 100 cc. of blood and the hematocrit was 35 per cent. Urinalysis showed specific gravity of 1.012, albumin one plus, 3 to 7 leukocytes and 0 to 1 erythrocytes per high power field. The blood urea nitrogen was 76 mg. per 100 cc. and the creatinine 7.3 mg. per 100 cc. The patient was treated with protein restriction and bed rest and was discharged improved in about one month. He returned in seven months with recurrence of symptoms. The physical findings were similar to those previously noted. The hemoglobin was 9.1 gm. per 100 cc. and the hematocrit 27 per cent. The blood urea nitrogen was 96 mg. per 100 cc. The results of examination were about as before. Serum calcium was 6.4 mg. per 100 cc. and the phosphorus content 8.9 mg. per 100 cc. Carbon dioxide combining power was 21 mEq. per liter. The patient was given calcium and alkali intravenously, blood transfusions and later basic aluminum carbonate gel (Basaljel®). He was discharged somewhat improved.

When admitted to hospital for the final time the patient had recurrence of the previous symptoms and, in addition, muscle cramps and paresthesias. The blood pressure was 180/124 mm. of mercury. Grade 3 retinopathic changes were present. The heart was enlarged. The hemoglobin was 6.1 gm. per 100 cc. and the hematocrit 17 per cent. The blood urea nitrogen was 126 mg. per 100 cc.

The quantitative urine protein content had ranged from 3.0 to 9.6 gm. in 24 hours over these several admissions and Addis counts had showed 1 to 5 leukocytes, 0 to 10 erythrocytes and 0 to 3 casts, granular and hyaline. The condition of the patient deteriorated progressively on the final admission and he died September 19, 1953. The final diagnosis was chronic glomerulonephritis.

On postmortem examination, the left kidney weighed 50 gm. and the right 75 gm. The capsule was adherent and there were depressed flat scars on the surface. The calyces and pelvis were dilated. There was extensive interstitial inflammation and fibrosis. The remaining tubules were either dilated or atrophic. In a few there were colloid casts. Many glomeruli showed cellular proliferation of their loops, adhesions between sclerotic tufts, and epithelial lamellar capsular crescents. Many glomeruli were normal. Moderate hyperplastic renal arteriosclerosis and arteriosclerosis were noted. There was marked submucosal inflammation and fibrosis of the renal pelvis. The proximal ureters were mildly dilated. The heart was enlarged.

Comment: This case was assumed to be one of chronic glomerulonephritis, and it is certainly true that, in a case of this type, where the entire renal

structure is severely involved, the distinction between glomerulonephritis and pyelonephritis is not readily made. Such a case might be studied more closely, however, prior to the terminal stages, for evidence of pyelonephritis, especially where there is not a definite history of glomerulonephritis. The presence of phimosis could conceivably have predisposed to the development of urinary tract infection.

CASE 4. A 36-year-old man was hospitalized for the final time on July 12, 1950. Some nine years previously the gallbladder had been removed because of recurring episodes of right upper quadrant abdominal pain. Nocturia developed after the operation and never completely disappeared. In 1942 the patient was treated successfully for gonorrhea. In 1942 he had pain in the right upper quadrant of the abdomen, and fever. Attacks of this type recurred thereafter, sometimes associated with jaundice. In 1943 pain and swelling in the right ankle developed. It recurred later and other joints also were affected. In 1945 the patient was hospitalized because of pain in the right upper quadrant of the abdomen, chills and diarrhea. At that time the blood pressure was 134/96 mm. of mercury and the temperature was 100° F. No abnormalities were noted upon examination of the abdomen. The hemoglobin value was 63 per cent and erythrocytes numbered 2.9 million per cu. mm. The urine contained no albumin and only a few white cells were observed on examination of the sediment. A Fishberg test was done and the greatest specific gravity was 1.010. Phenolsulfonphthalein excretion was 20 per cent in one hour. The blood urea nitrogen was 51.5 mg. per 100 cc. and the creatinine was 2.55 mg. per 100 cc. An intravenous pyelogram showed decreased excretion but normal outlines. The symptoms subsided and the patient was discharged with a diagnosis of nephritis and cholangitis.

In February 1950 malaise, vomiting and cough developed, and in March 1950 the patient was hospitalized again. At that time the blood pressure was 200/130 mm. of mercury. Grade 4 retinopathic changes were noted. The heart was enlarged. The hemoglobin value was 74 per cent and erythrocytes numbered 3.7 million. The urine showed a trace to 2 plus albumin. The urinary sediment contained up to 10 leukocytes per high power field and a few erythrocytes. The protein content of the 24-hour volume of urine was 2.0 gm. A culture of urine was negative on one occasion and grew Gram-positive micrococci on another. The blood urea nitrogen was 34 mg. per 100 cc. and the creatinine was 3.5 mg. per 100 cc. Retrograde pyelograms were normal. The blood uric acid content was 9.8 mg. per 100 cc. An electrocardiogram showed left ventricular hypertrophy. Treated with bed rest and a low sodium diet, the patient became symptom-free and was discharged from the hospital in three months.

Exertional dyspnea and substernal and epigastric

pain developed and the patient was admitted to hospital again in July 1950. The blood pressure was 185/140 mm. of mercury. The results of physical examination and laboratory tests were similar to those of the previous admission. In the hospital the patient soon became asymptomatic again. Then on August 1, 1950, following the sudden onset of headache and a convulsive seizure, he died. The final clinical diagnosis was chronic glomerulonephritis, cerebral hemorrhage and gallstones.

At postmortem examination, the kidneys weighed 300 gm. and were of equal size. The capsules were adherent and the cortex was reduced in size. The pelvis and ureters were slightly dilated. There were broad vertically arranged linear areas of cortical fibrosis, dusted with lymphocytes and containing collections of small atrophic tubules with flattened epithelium and colloid casts. Granular cytoplasmic degeneration was seen in some convoluted tubules. Some tubules were dilated. The glomeruli in the areas of scarring were sclerotic, elsewhere actually normal. Moderate hyperplastic renal arteriosclerosis was present, with occasional foci of smudgy fibrinoid necrosis. The renal pelvis showed submucosal fibrosis and inflammation. The heart was enlarged, and there was a focal nonspecific chronic myocarditis. Chronic cholangitis and cholelithiasis of the common bile duct and intrahepatic ducts were observed. There was a massive cerebral hemorrhage.

Comment: An unusual feature of the course of the disease in this case was that in the five years before death hypertensive disease progressed while the impairment of renal function, as judged by the blood urea nitrogen and creatinine, stayed relatively constant. This is consistent with the fact that the autopsy findings were those of healed pyelonephritis. The presence of gout may have been an important predisposing factor in the establishment of chronic pyelonephritis. In addition, recurrent bacteremia, as a result of cholangitis, might promote continuous hematogenous reinfection of the kidneys, eventually leading to chronic infection.

CASE 5. The patient, a 57-year-old man, was admitted to hospital for the last time on April 21, 1953. In 1918 he had had "Bright's disease" and thereafter had had several attacks of "kidney trouble." In 1943 he was hospitalized because of a possible heart attack. At that time the blood pressure was 142/100 mm. of mercury. The urine showed one plus albumin, one plus leukocyte content and fine granular casts. No abnormalities were noted in an electrocardiogram or in an x-ray film of the chest. The blood urea nitrogen was 19 mg. per 100 cc. and the urea clearance was 100 per cent. On concentration test the specific gravity of the urine went up to 1.014. The patient was discharged with a diagnosis of angina pectoris. In 1948 he was readmitted because of acute episodes of pain and swelling in several joints. The blood pressure was

150/90 mm. of mercury. The optic fundi were normal. No abnormality was noted in routine examination of the blood. Urinalysis showed four plus albumin, 10 to 15 leukocytes per high power field, and some fine granular casts. The blood urea nitrogen was 19 mg. per 100 cc. Uric acid content was 3.4 mg. per 100 cc. The patient was treated with bed rest and salicylates and a diagnosis of gout was made. He was discharged improved. Nocturia and recurrent attacks of low back pain developed at about this time. In January 1953 the patient had chills, fever and weakness. In April 1953, a few weeks before the final admission, severe low back pain developed.

At the time of the final admission, the blood pressure was 154/80 mm. of mercury. Grade 1 retinopathic changes were present. The hemoglobin was 7.6 gm. per 100 cc. of blood and the hematocrit was 23 per cent. Urinalysis showed specific gravities ranging from 1.008 to 1.012; the albumin reaction was two plus to four plus; in the sediment there were from two leukocytes to many per high power field and from 0 to 20 erythrocytes. The blood urea nitrogen was 138 mg. per 100 cc. and the creatinine 13.8 mg. per 100 cc. Various organisms grew on cultures of the urine, including hemolytic and nonhemolytic *Staphylococcus aureus*, *paracolon*, *Proteus vulgaris* and *enterococcus* in varying combinations. The patient was given a low protein, low salt, low purine diet. Penicillin and blood transfusions were administered. Pain in the right great toe developed and it was treated successfully with colchicine. In May, 1953, the patient had pain in the back and fever, which improved with the use of aureomycin. He then began to vomit repeatedly and became semicomatose. Blood and fluids were infused and his condition improved. For the next six months the course was one of exacerbations and remissions, with the patient always in profound uremia, and he finally became comatose and died on December 27, 1953. The final clinical diagnosis was pyelonephritis.

At autopsy the kidneys together weighed 120 gm. The right kidney was somewhat smaller than the left. The capsules were adherent. There was irregularly distributed cortical interstitial fibrosis and infiltration with lymphocytes and histiocytes. The convoluted tubules were dilated and some showed flattening of the epithelium by intraluminal colloid casts. There was some periglomerular fibrosis with slight glomerular sclerosis. Deposits of urate crystals with an associated inflammatory reaction were noted in and about the collecting tubules. Moderate renal arteriosclerosis and arteriolosclerosis were present. There was hyperemia of the calyces and pelves. The pelves showed subepithelial infiltration by chronic inflammatory cells.

Comment: This patient presumably had chronic urinary infection dating back to 1918. The fact that there was no impairment of renal function until the final admission suggests that the infection must have

been focal. In such cases, with persistent bacteriuria and pyuria, the course may be relatively benign for many years, with little if any development of renal functional impairment or hypertension (in contrast to the course in Case 2 reported herein). The precipitation of urate crystals in the collecting tubules and elsewhere may have been an underlying cause of the establishment of chronic pyelonephritis and may have contributed to the final deterioration of renal function. The urine culture studies reveal the mixed nature of the bacterial flora often present in advanced cases; and the difficulty of antibiotic treatment of such infections is well recognized.

DISCUSSION

The cases described typify some of the uncertainties attending the clinical recognition of pyelonephritis. In all but *Case 5* the final clinical diagnosis was one other than pyelonephritis, and in *Case 5* the patient did not receive therapy directed at pyelonephritis until he was in a terminal uremic state.

In many cases, owing to the insidious, frequently asymptomatic onset, early diagnosis may not be possible. However, there are certain clinical situations in which the diagnosis of pyelonephritis should be strongly considered—for example, (1) the onset of rapidly progressive hypertensive vascular disease in a patient under the age of 30 years, particularly in the absence of a family history of hypertension, (2) the presence, in a hypertensive patient, of renal insufficiency which seems to precede or to be out of proportion to the level of the diastolic blood pressure and the degree of hypertensive retinopathy, and (3) the presence of pronounced anemia in a patient with malignant hypertension. In a patient with unexplained chronic renal disease, sometimes asymptomatic and sometimes giving a history of pallor, lassitude, fatigue and nocturia, showing albuminuria and an abnormal urinary sediment, in the absence of a history of glomerulonephritis, the possibility of pyelonephritis should always be considered.^{5,12,15,18} In a patient with gout, pyelonephritis should be considered as a possible contributory factor whenever impairment of renal function develops.³

In typical cases the laboratory diagnosis of pyelonephritis is said to depend upon the demonstration of pyuria, bacteriuria and proteinuria. When proteinuria is absent, the renal parenchyma is usually not involved. Proteinuria is usually mild, rarely over 2.0 gm. in 24 hours. Pus cells may occur in clumps and the number is usually over 30 million in 24 hours. Usually there are no erythrocytes or only a few in the urine. In the terminal stage of a chronic case, proteinuria may

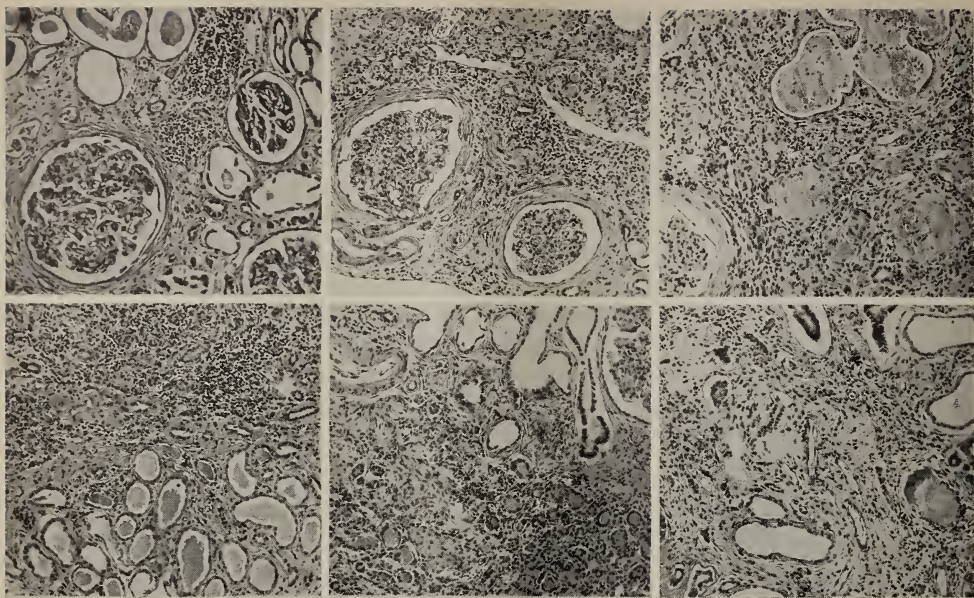


PLATE I—All specimens hemotoxylin and eosin stained. All $\times 120$.

TOP ROW—Left: (Case 1) The glomeruli are unaltered. There is periglomerular fibrosis, accompanied by chronic nonspecific inflammation and fibrosis. The convoluted tubules are dilated, their epithelium flattened and lumens filled with colloid-like casts.

Center: (Case 4) The periglomerular fibrosis is accentuated about normal glomerular bodies. The scarified interstitium contains small atrophic tubules with luminal colloid casts. The arterioles exhibit laminated, as well as smudgy, hyaline obliterative sclerosis.

Right: (Case 5) The periglomerular sclerosis about some glomeruli alternates with ball-like hyaline obliterative sclerosis of other glomeruli. The interstitial scarifying inflammatory process is associated with cystic dilatation of isolated tubules. Their lumens contain colloid casts, often stippled with polymorphonuclear leukocytes.

BOTTOM ROW—Left: (Case 2) There is a sharp line of demarcation between a scarified atrophic area of cortex, heavily infiltrated by chronic inflammatory cells, and an adjacent zone of dilated tubules containing colloid casts.

Center: (Case 3) Cystic atrophic tubules alternate with shrivelled atrophic tubules in a scarified matrix. Note the normal glomerulus and the mildly sclerotic arterioles.

Right: (Case 5) The scarified medullary pyramid, stippled with chronic inflammatory cells and containing dilated tubules, shows at one side the presence of a deposit of urate crystals surrounded by a foreign body giant cell reaction at one pole.

be present up to 5.0 gm. in 24 hours, and granular and waxy casts, many of them broad, may be seen.¹¹ However, it has been pointed out that bacilluria and pyuria may be present only intermittently, because the infection is often walled off and because destroyed nephrons may cease forming an inflammatory exudate. The clinical picture may be further confused by the occurrence of episodes of hematuria, usually occurring late in the disease, presumably from eroded areas, cicatrices and granulomas.⁵

Mansfield, Mallory and Ellis¹³ pointed out that, in the presence of chronic Bright's disease, there is no pathognomonic pattern by which one may distinguish between glomerulonephritis, pyelonephritis and nephrosclerosis. Pyuria may be present in pyelonephritis, but in the healed type it is not

present so regularly. It may be concluded that repeated culture and microscopic examination of the urine, including in some cases serial quantitative measurements by the Addis technique, may be indicated in order to establish a diagnosis. It may be unwise to exclude the diagnosis of pyelonephritis on the basis of single or random urinalyses.

Sternheimer and Malbin¹⁷ described a method for supravital staining of the urinary sediment by which certain leukocytes are identified as being specific for renal inflammatory disease and not found in lower urinary tract infection, glomerulonephritis or hypertension. The mechanism of this reaction is not yet understood, so that at present it remains an empirical observation, the usefulness of which depends upon confirmation of the specificity of the reaction in a larger number of cases.

Pyelograms may give valuable information in some cases. Braasch² described the characteristic findings as ureterectasis and caliectasis with narrowing of the infundibula and renal pelvis. Localized ureterectasis may be the only finding. No deformity may be found in some cases, in spite of a long history of pyuria. Braasch felt that retrograde and intravenous pyelograms often give complementary information. Hyams and Kenyon⁹ describe certain cases in which the pyelographic findings were confined to certain calyces, which developed a stunted appearance, and which appeared, upon successive pyelograms, to contract and disappear. Certain cases bore a resemblance to renal tuberculosis. It is suspected that pyelograms would not be helpful in early cases and in those with primarily interstitial inflammation.

Renal function studies do not, in general, give information that will facilitate differentiation of pyelonephritis from other forms of renal disease. Corcoran, Taylor and Page⁸ found that the pattern of renal blood flow, glomerular filtration and tubular secretion in pyelonephritis was similar to that in established essential hypertension, the greatest proportionate reduction being in renal plasma flow. In the presence of pyuria and bacteriuria, however, use of the clinically applicable renal function tests, including a test of concentrating ability, may serve to separate those with generalized renal involvement from those with focal renal infection or lower urinary infection, provided there is no other cause for renal insufficiency.

Punch biopsy of the kidney, used in conjunction with renal function studies, has been advanced as a means of differential diagnosis of renal disease. Brun and co-workers,⁴ in a study designed to clarify the diagnosis of diabetic nephropathy, found that of eight diabetic persons with a clinical diagnosis of chronic pyelonephritis based on the presence of bacilluria and pyuria, only one had chronic pyelonephritis by renal biopsy. Parrish and Howe,¹⁴ on the other hand, found pyelonephritis six times in 29 successful needle biopsies. They described one case in which an arthritic patient with fever had negative urine cultures yet renal biopsy showed pyelonephritis and there was good response to penicillin therapy. Kipnis and co-workers,¹⁰ in evaluating renal biopsy in pyelonephritis, noted that in patients with pyuria and bacteriuria there was a good correlation between impairment of renal function and morphologic abnormality of the kidneys as determined by renal biopsy. The principal limitation of renal biopsy is the fact that the section examined is not necessarily representative of the entire kidney. Hence in cases of early or healed pyelonephritis, where the abnormalities may be

focal, the diseased area may be missed; and even when it is included in the biopsy specimen, one cannot be sure about the extent of the lesion. The latter point is an important one, for the incidence of pyelonephritis was reported as 10.5 per cent¹⁰ in one series of consecutive autopsies and as 15 per cent in another. In many of those cases the disease was presumably minor in extent and probably not contributory to the patient's death.

The interpretation of renal biopsy data should be based upon integration with the other available clinical facts. At present the use of this procedure should be limited to programs of clinical investigation and to individual diagnostic problems not resolved by other means.

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Melanoma-Simulating Nodules Due to Capillary Aneurysms

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IF EVER THERE is an emergency surgical situation on the skin, it is the flat, black, smooth, hairless, growing nodule. This has been emphasized and reemphasized as representing a malignant melanoma and an indication for immediate ruthless surgical attack. While it has been recognized that many lesions of little or no malignant tendency can simulate this picture, the threat of the melanoma has pushed these imitators into the background of the clinician's thoughts.

Such a lesion on the face of one of the authors of this communication, focused attention on this conflict. The problem of convincing a surgeon that conservatism was indicated was not easy. Therefore, the following group of cases is presented.

REPORTS OF CASES

CASE 1. A tiny black, flat, smooth lesion developed under the right eye of a 45-year-old dermatologist early in 1955. The lesion developed in skin that was previously grossly normal. After two months of inactivity, the nodule suddenly began to grow very rapidly. The lesion tripled in size in a period of three weeks for no apparent reason. There was no traumatic incident either preceding the appearance of the tumor or before the acceleration in growth. As it was not in the bearded area, shaving was not a factor. The lesion was observed by a number of dermatologists, radiologists, surgeons and pathologists. The clinical impression was malignant melanoma. The lesion was excised conservatively and biopsy revealed a capillary aneurysm with thrombotic phenomena as described in a discussion of histopathologic features later in this presentation. There has been no recurrence.

CASE 2. A 31-year-old sister of a psychiatrist was seen in 1950 because of a small, rapidly growing, dark-black, slightly raised nodule on the base of the left ring finger that had been present for two weeks. There was no history of a preexisting nevus nor of trauma at the site. There were no palpable regional lymph nodes. The clinical diagnosis was melanoma. However, so small was the lesion that it was completely excised with a biopsy punch. A frozen section was examined and dilatation of a vascular chan-

• Six cases of a lesion simulating a melanoma clinically but due to an aneurysmal dilatation of a capillary with thrombosis are presented.

The necessity of distinguishing these tumors from malignant melanomas is stressed.

The thesis that every black, flat, growing lesion is not a melanoma is emphasized. Therefore, it follows that wanton sacrifice of adjacent normal tissue is not indicated in such lesions unless there is histologic proof or indisputable clinical evidence of malignancy.

This is not to be construed as advocating that one should minimize the growing flat black nodule nor that histologic examination is not essential in such cases.

nel and thrombotic changes were observed. There has been no recurrence.

CASE 3. The 44-year-old son of an internist was examined in June, 1955, because of a small, stationary, blue-black, slightly elevated, smooth, shiny nodule on the right cheek of four months' duration. There was no history of a preceding lesion or of an injury. It too was removed with a biopsy punch. Upon histologic examination the lesion was observed to be a capillary aneurysm. There has been no recurrence.

CASE 4. A woman 59 years of age, the wife of a dentist and the mother of a pathologist, was first observed July 23, 1946, because of a progressively enlarging black lesion involving the right side of the forehead of six weeks' duration. Since first observed, it had nearly doubled in size. Upon examination a smooth blue-black nodule about 1.5 cm. in diameter on the right temple was noted. The lesion was removed with wide excision and the base was electrodesiccated. Microscopic examination of the lesion showed a dilated blood vessel in which there was a fibrin deposit and thrombotic changes.

CASE 5. A woman 50 years of age was seen because of a lesion situated about 1 cm. below the midportion of the lower right eyelid. It had been present for approximately two years and was asymptomatic except that it had been growing slowly. On examination a blue-black papule, dome-shaped, smooth and slightly shiny, was observed. The lesion was 0.5 cm. in diameter. From the clinical appearance, it was thought to be an early melanoma. Under local anesthesia the lesion was removed. On

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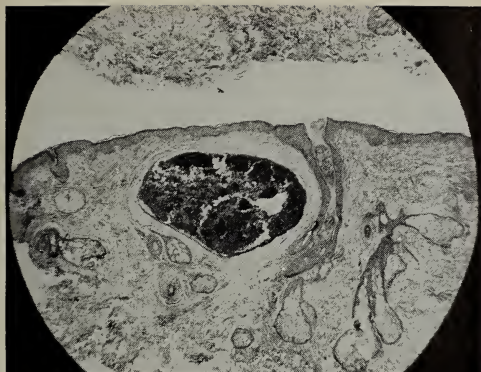


Figure 1.—Varix in the upper corium. Note the secondary distortion of the adjacent hair follicle. (Hematoxylin and eosin stain, $\times 25$).

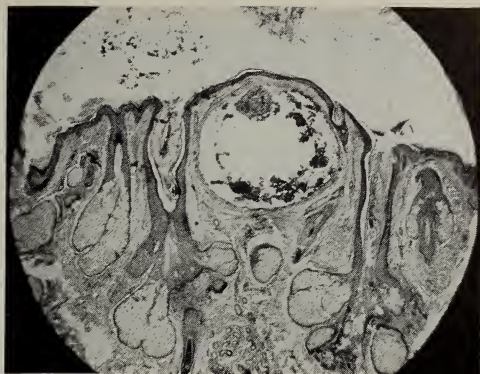


Figure 2.—Varix in the upper corium showing a mural thrombus. (Hematoxylin and eosin stain, $\times 25$).

microscopic examination of the specimen the skin appeared normal except that in the center of the section there was a large thrombosed blood vessel. There was no inflammatory reaction about the vessel or elsewhere in the section. The patient was seen nine years later. There remained only a thin atrophic scar without evidence of recurrence.

CASE 6.* A 35-year-old white man was seen on February 8, 1955, with a small, slightly elevated, blue-black nodule on the external canthus of the right eye. The lesion had been noted during the past few months and had started to enlarge in the previous two weeks. The clinical diagnosis was melanoma. The neoplasm was excised and a frozen section examination revealed a capillary aneurysm, eliminating the need for extensive operation.

HISTOPATHOLOGY

Microscopically, lesions such as those removed in the foregoing cases consist of a dilated vascular channel lying immediately beneath the epidermis (Figures 1 and 2). Anatomically the vascular channel is of capillary structure in that it is lined by a single layer of endothelial cells and surrounded by a few concentric layers of collagenous connective tissue. No muscle fibers or elastic tissue are seen in the wall (Figure 3). The connective tissue surrounding the vascular channel is slightly edematous but otherwise not remarkable. In one instance a small mural thrombus is seen adherent to the wall of the vessel (Figure 4). A few fibroblasts in the edge of the thrombus indicate early organization. Serial section of the lesion shown in Figure 1 indicated that the dilation is essentially spherical and terminates in a small capillary in the upper dermis (Figures 5 and 6). Further evidence of the nature

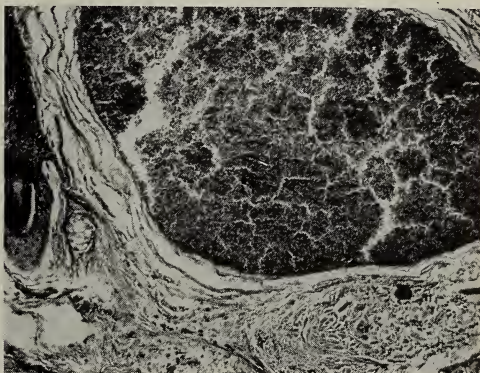


Figure 3.—Detail of the wall showing the concentric layers of edematous connective tissues in which no muscle or elastic fibers are present. (Elastic van Gieson stain, $\times 100$).

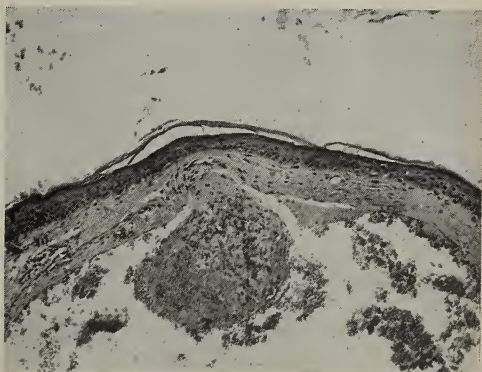


Figure 4.—High power photomicrograph of wall of varix showing early organization of the thrombus and the structure of the wall. (Hematoxylin and eosin stain, $\times 100$).

* Data supplied by Dr. Norman Epstein.

of the lesion is given by the distortion of hair follicles immediately adjacent to the vascular channels, secondary to the dilatation of the small capillary.

DISCUSSION

It is difficult to justify the all too common sacrifice of normal skin and subcutaneous tissue just because it happens to adjoin a black, smooth tumor. Actually, such lesions are more often benign than malignant. This concept is underscored in the list of lesions that may present these features. It includes blue nevus, junction nevus, pigmented basal-cell epithelioma, melanotic freckle, epithelial and sebaceous cysts, granuloma pyogenicum, glomus tumors, hemangiomas, hemorrhages, fibro-angiomas and angiosarcomas. To this list the authors must add capillary aneurysms. This should not be construed as recommending the minimizing of the black lesion, rather it is a plea for the exercise of therapeutic perspective instead of the wanton sacrifice of flesh in benign lesions.

The usually accepted criteria of malignant degeneration include growth, bleeding, metastasis, ulceration and deepening of color. Unfortunately, growth is a common finding in these aneurysms. Bleeding may occur. Metastasis does not occur, but it would be possible, if unlikely, for such a lesion to be multiple. The black color often becomes more pronounced as the tumor grows. Ulceration has not been reported.

However, these features of malignancy are late findings. In other words, the absence of any or all of these does not rule out malignant degeneration. The moment at which a junction nevus arouses itself from its quiescent state to become a cancerous marauder of the body tissues, may be a fine one indeed. It may be impossible to recognize this moment of change clinically, or even histologically.

These capillary aneurysms do not resemble localized varicose veins, hemangiomas or hematomas. In fact there is only one applicable comparison: The lesion looks like a melanoma. The most suggestive features in this series were rapid growth and the absence of a preexisting nevus. Unfortunately, melanomas may arise in normal skin and the incidence of this occurrence has been reported at from 40 per cent to 70 per cent in various series.³

The reader may wonder why the high proportion of cases among physicians and their families. This is related in all probability to the recognition of the danger signs by this group. Other persons, less likely to be aware of the significance of such a lesion, may ignore it. And perhaps these lesions then "heal" spontaneously as the thrombus organizes. These neoplasms have not been observed to follow such a course, for in all the cases here re-

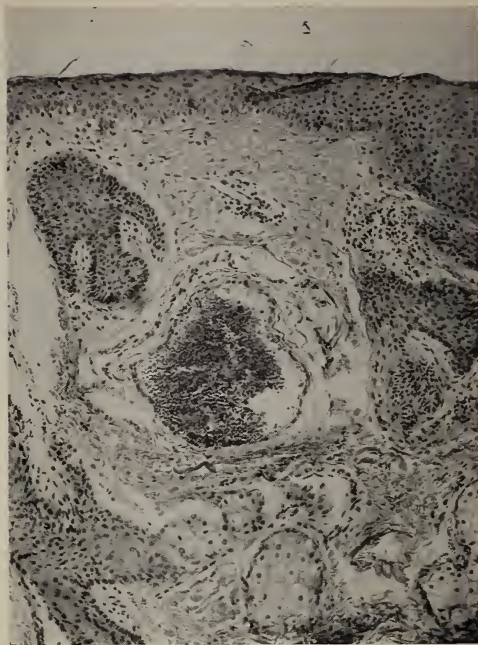


Figure 5.—Section approximately three-quarters of the way through the varix showing its spherical shape. (Hematoxylin and eosin stain, $\times 100$).

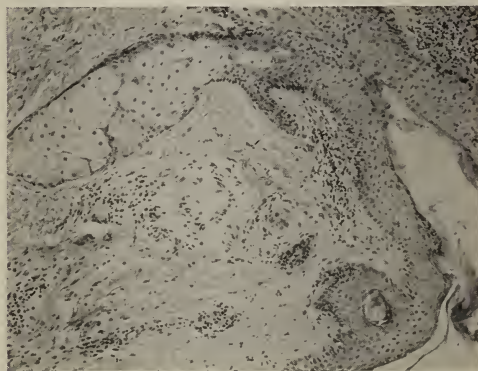


Figure 6.—Section through the edge of the varix showing its return to approximately capillary size. (Hematoxylin and eosin stain, $\times 100$).

ported, the lesions were removed for histopathologic examination. However, McNitt removed such an aneurysm from the nasolabial fold of a white woman who told him that the lesion "had come before and disappeared."²

In operations for removal of cancer, cosmetic results are of little importance. However, when a benign lesion is being removed, every attempt should be made to preserve the normal appearance of the

patient's skin. Therefore, it is important to differentiate clinically these lesions from melanomas or pre-melanomatous junction nevi. Unfortunately, this is not simple. In all the cases in this series the lesions were diagnosed clinically as melanoma or possible melanoma. Certainly, in cases of doubt, such a lesion should be considered malignant until proven otherwise by histopathologic investigation. However, perhaps the most important point is that a conservative excisional biopsy can be performed in a lesion suspected of being a melanoma.¹ These aneurysms are small. If the diagnosis of melanoma

is confirmed, more radical operation may be performed. On the other hand, if a benign lesion is discovered, the patient is cured and everyone is relieved.

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Parotid Tumor Operations

The Case Against Enucleation

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AS LONG as operation for removal of "encapsulated" parotid tumors is associated with the possibility of disastrous injury of the facial nerve, there will be a tendency on the part of many clinicians to delay definitive treatment and of surgeons to utilize the less frequently successful and often hazardous limited excision. This compromising attitude abides even though it is well recognized that delay in surgical treatment increases not only the difficulty of operation but the hazard of incurable spread, and despite the facts that enucleation is successful in not over 38 per cent² of cases and curettage almost never. In addition, both procedures, when they fail, result in a far worse clinical state than would have been the case if no operation had been done. This is because the parotid tumor is contained within a single unit space before operation, separated from the extraparotid structures and seventh nerve by complete protective fascial layers, but after limited operation the residual disease as it recurs in single or multiple foci comes into intimate contact with the branches of the facial nerve, with the surrounding sternocleidomastoid, digastric and masseter muscles and with the overlying skin. In fact, the entire "man-made" surgical field with all the surrounding exposed surfaces and tissues is a potential site for recurrent disease. Recurrence demands the removal of the entire previously made surgical field including the adherent nerves, muscles and skin. Not only is this operation associated with a greatly multiplied hazard to the seventh nerve, but in spite of the ultimately more radical procedure the chance of successful extirpation of the parotid neoplasm is less than it would have been if radical operation had been done in the first place. In addition, not infrequently, radiation therapy is given in a vain attempt to overcome the original surgical inadequacy even though radiation may not be indicated and may increase the patient's discomfort and entail cosmetic and functional deformity.

RATIONALE

The danger of any procedure less than subtotal parotidectomy in the management of parotid tumors

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Submitted October 31, 1955.

• So-called mixed "encapsulated" parotid tumors are best managed by surgical procedures which avoid contact with the "capsule." Enucleation is often a hazardous and incomplete procedure. Subtotal or total parotidectomy with exposure of the facial nerve to avert accidental damage to it is the treatment of choice.

Microscopic study of the periphery of such tumors reveals that the "capsule" does not fully encapsulate; hence, enucleation and lesser procedures may leave neoplastic tissue behind.

Surgical procedures to achieve complete excision without endangering the facial nerve were carried out in 123 cases. There was local recurrence in one case.

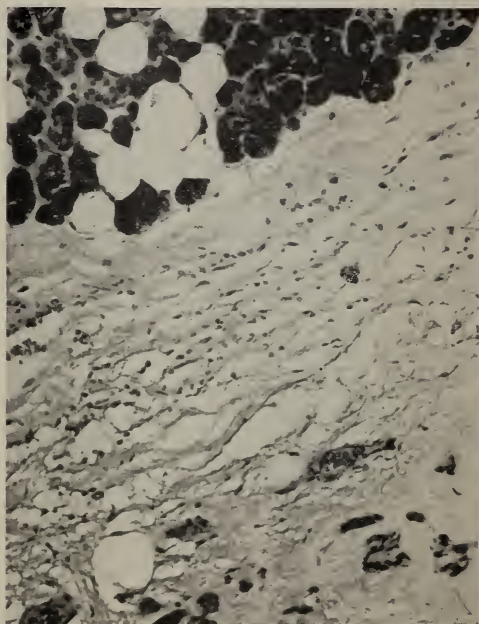


Figure 1.—(×200) Reveals no barrier or "capsule" between tumor and parotid. In fact the cell-containing mucinous-like fibers naturally fuse with tumor on one side and contact the parotid gland on the other. Therefore it is impossible to separate the two by going between tumor and parotid gland without leaving some tumor attached to the parotid gland in many places. This shows how this tumor could be "enucleated" and yet not be completely extirpated.



Figure 2.—($\times 200$) Shows loose and compressed hyalinized fibers containing many spaces and cells representing a reactive fibrous stroma of the host rather than a specific fibrous layer which could be called either a "capsule" or a fascial layer. Here a tongue of tumor could easily be broken off and left as a nidus for future recurrence.

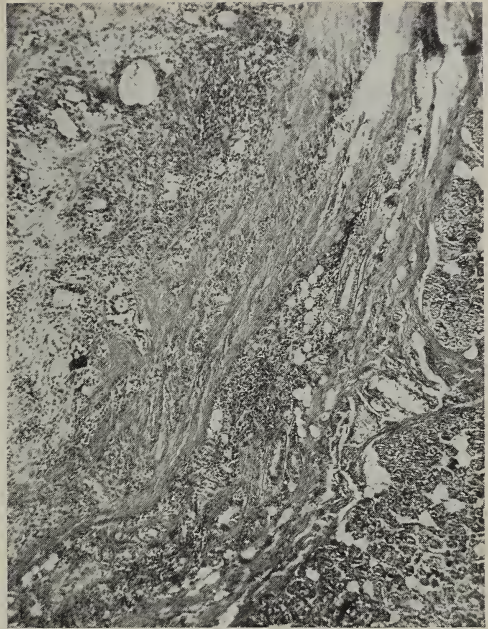


Figure 3.—($\times 120$) Here tumor cells are seen in the center of the fibrous septum between the main body of the tumor and the parotid gland. In addition the fallacy of the so-called "capsule" is well illustrated here since the peritumoral fibrous stroma is seen to be a continuation of the regular fibrous septa separating the parotid gland lobules.

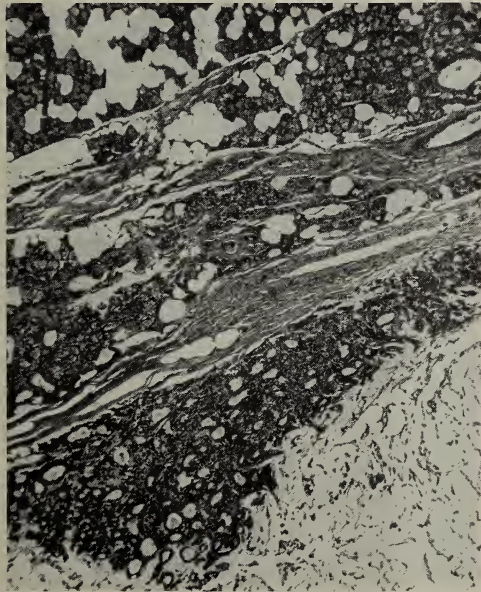


Figure 4.—($\times 120$) This shows the fallacy of the "capsule." The artificial cleavage plane is well demonstrated.

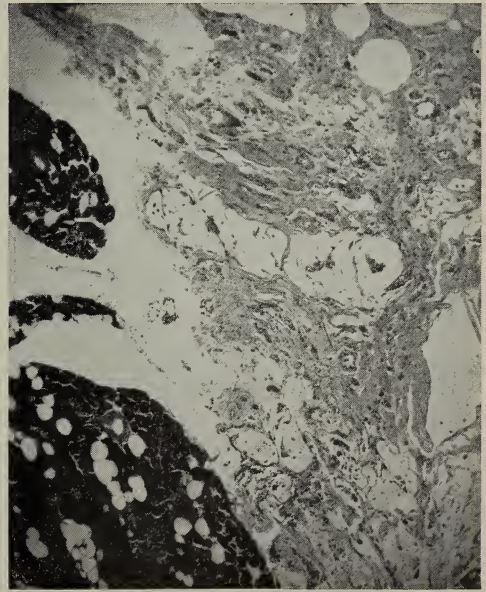


Figure 5.—($\times 120$) This section reveals tumor tissue in contact with parotid gland with no intervening "capsule."



Figure 6.—($\times 60$) This section demonstrates the fallacy of the "capsule" and shows that the covering of the tumor is only a continuation of the interlobular fibrous septa of the parotid gland. Here the septal band between the parotid lobules is many times thicker than the very thin one surrounding the tumor.

is well illustrated by microscopic study of the periphery of a so-called "encapsulated" neoplasm (see Figures 1 to 7). The tumor "capsule" is not a specifically organized tissue such as an enveloping fascia or a glandular cortex.³ Rather, it is a greater or lesser condensation of the fibrous stroma of the host tissue (the parotid salivary gland) and it develops more or less inversely to the rate of growth of the tumor. This fibrous barrier is of uneven thickness and in places where the tumor is intimately in contact with the parotid glandular elements it is practically absent. The elements of this fibrous "capsule" are continuous with and extensions of the fibrous septa present between the lobules of the gland, thus revealing its identity as a part of the host stroma. In addition to the intimate points of contact between the gland and the tumor, islands of connected or disconnected tumor tissue can be seen in the interstices between the fibrils of the tumor "capsule" or on its glandular side.

The histopathologic features are such that enucleation procedures must be hazardous if not utterly futile.

To excise these tumors adequately, the fibrous "capsule" must be entirely removed, and in order

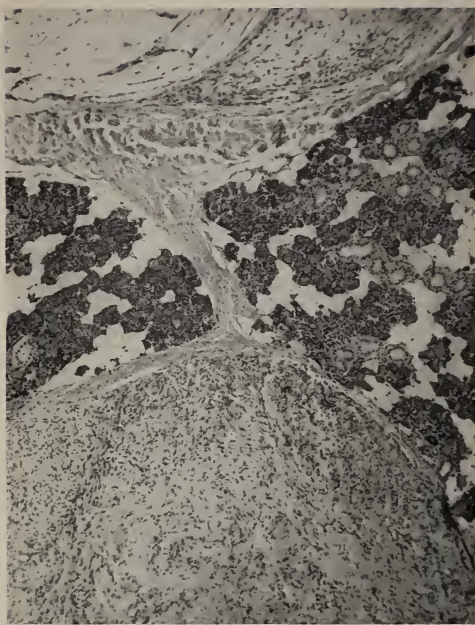


Figure 7.—($\times 120$) A recurrent case with several nodules of tumor tissue. Here two recurrent nodules are seen connected by a thicker fibrous band but with thinner surrounding fibrous septa between them and the parotid gland tissue. This definitely shows the impossibility, in recurrent cases, of safely enucleating the recurrent nodules.

to do this completely a "shell" of parotid glandular tissue must be excised with the tumor. To do this without injury to the seventh cranial nerve, the nerve is first isolated by whatever means the surgeon chooses. It is traced along all its ramifications toward the tumor-containing portion of the parotid gland. As this is done the superficial lobe will be completely freed, and if the tumor is within it the lobe can then be safely transected well beyond the palpable margin of the contained tumor without injuring the nerve branches in the vicinity, since they already have been dissected out and are easily seen. If the tumor is in the deep lobe, this procedure will first safely remove all the superficial lobe, exposing the deep lobe, which can then be completely removed without danger to the facial nerve branches, which are exposed and visible. Often with deep lobe tumors the nerve branches lie very close to the overlying skin because of the pronounced attenuation of the superficial lobe. In such circumstances the facial nerve easily could be seriously damaged by a direct surgical approach to what might appear to be a very superficially placed tumor. Although the nerve fibers in these conditions are often tautly stretched over the tumor, they can

be saved by careful and tedious dissection and further stretching beyond the periphery of the deep lobe tumor to permit removing it completely. If the tumor is partially sequestered, the enveloping fascia between it and the extrinsic tissues and facial nerve is an adequate protective barrier and a safe plane for dissection if it has not been opened by previous inadequate surgical procedures.

RESULTS

In the period 1947 to 1955, 123 patients with parotid tumors were primarily treated by the technique described. The period of observation after operation ranges from one month to eight years—over three years in 62 cases and over five years in 33 cases. There was only one instance of local recurrence. In that case a diagnosis of adenocarcinoma was made at the time of the primary excision and the recurrence appeared in the external auditory canal.

DISCUSSION

Frequently it is stated that recurrence following operation for removal of a parotid tumor is owing to the presence of multiple primary foci. There is no clinical or histologic proof of this. In a review of the literature only a few exceptional instances were noted of simultaneous multiple or bilateral

mixed "encapsulated" parotid tumors which were present before the first surgical intervention.* Sequestered tumors present in contact with the primary lesion or attached lobulations are, of course, single tumors and the suggested primary surgical management in these instances should result in equally satisfactory results.

Mention might also be made of the futility of pre-operative irradiation in order to toughen the parotid tumor "capsule" so that the growth can more safely be "shelled out." Such radiation, if successful, would equally tend to toughen the normal glandular interlobular septa which fuse intimately with the so-called "capsule." Subsequent enucleation then would tend to be even less complete than it might have been if the fibrous connections between the tumor, its "capsule" and the normal parotid gland were less toughened.

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*In the present series there was one case of multiple mixed tumors. Frazell¹ in a review of 877 cases reported no instance of primary multicentricity.



Serologic Diagnosis of Syphilis

The Use of *Treponema Pallidum* Immobilization and Immune Adherence Tests

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JAMES N. MILLER, Ph.D., Los Angeles

STANDARD SEROLOGIC TESTS (STS) employing lipoidal or cardiolipin antigens have been used routinely in the serologic diagnosis of syphilis since 1906. Inasmuch as such antigens are nonspecific, many investigators recognize that biologic false positive reactions (BFP) occur in patients with deranged physiologic states or with diseases other than syphilis. They stimulate the production of a nonspecific antibody, reagin, as measured by antigens employed in serologic tests for syphilis. Biologic false positive reactions occur in so-called normal persons and are considered by certain investigators to be presumptive evidence of a collagen disease. Conversely, the disappearance of reagin during the tertiary and latent stages of syphilis results in a biologic false negative (BFN) reaction. Because syphilis simulates many diseases, an indefinite history renders it difficult to determine whether a patient has syphilis or is a BFP reactor, especially if one considers the variable period of latency occurring in syphilitic infection.

The development of the *Treponema pallidum* immobilization (TPI) test by Nelson and Mayer⁸ in 1949, employing virulent, motile *T. pallidum* as the antigen, made available for the first time a specific diagnostic procedure for syphilis. They observed that 89 per cent of patients clinically and epidemiologically classified as BFP reactors had negative reaction to TPI tests. Conversely, patients with clinically recognized tertiary syphilis but negative reaction to STS, had positive reaction to TPI tests. Their results have been duplicated by many investigators.^{4, 5, 9} On the basis of results obtained in an extensive investigation, Moore and co-workers⁶ said that approximately 50 per cent of patients who have positive reaction to STS but do not have a history of syphilis, are BFP reactors.

Although the TPI test has been established as the most specific and sensitive test for syphilis yet developed,¹¹ carrying out the test in the laboratory is highly technical and complex, thus limiting its use to a few laboratories throughout the world. As a result a search is in progress for a simpler test utilizing killed *T. pallidum* for an antigen so that the pro-

• TPI tests were carried out on 4,060 sera. Among 3,934 patients with reactive STS and no history of syphilis, 2,148 or 54.6 per cent had negative reaction to TPI tests, 1,695 or 43.1 per cent had positive reaction and 91 or 2.3 per cent had doubtful reaction.

Two hundred and ninety-two or 73.0 per cent of 400 pregnant women with reaction to STS in the absence of a history of syphilis showed negative results by TPI test, 103 or 25.8 per cent had positive results and five or 1.2 per cent had doubtful reaction.

Ninety-five or 75.4 per cent of 126 patients with a history of treated syphilis had positive reaction to TPI tests, 20 or 20.2 per cent had negative reaction and nine or 9.1 per cent had doubtful reaction.

TPI and TPIA tests were done on 143 sera carefully selected for the study. Among 102 sera subjected to the TPI test, 46 or 100 per cent of these positive were also positive by TPIA tests, while 52 or 94.5 per cent of 55 TPI-negative sera were also nonreactive by TPIA test. One serum gave doubtful TPI test reaction and positive TPIA test reaction.

cedure may be employed in the routine clinical laboratory. The immune adherence (TPIA) test developed by Nelson⁷ in 1953 shows promise. It is based on the principle that virulent *T. pallidum*, sensitized in the presence of antisyphilitic serum, adheres to the surface of human red cells in the presence of complement.

This communication provides further evidence of the value of the TPI test based on results obtained on 4,060 sera. In addition, a comparison of the sensitivity and specificity of the TPIA and TPI tests is presented.

MATERIALS AND METHODS

The TPI test was carried out on 4,060 sera according to the method of Nelson and Mayer⁸ with modifications as described by Magnuson and Thompson³ and Boak and Miller.¹ Specimens of blood were obtained in specially processed glassware from private physicians throughout California and from the Los Angeles city and county health departments. The sera were removed and stored at -20° C. prior to testing.

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Submitted March 29, 1956.

The TPIA test was performed on 143 sera as described by Nelson⁷ with modifications recommended by Rein.¹⁰ The antigen employed was a heat-killed, merthiolate-preserved specimen of *T. pallidum* which was stable for at least two months.

RESULTS

Treponema Pallidum Immobilization Test

TPI tests were carried out on 4,060 sera. Of the total, 3,934 were reactive by standard serologic test but were obtained from patients with no history of syphilis. The remaining 126 sera were from patients with a history of treated syphilis.

Among the 3,934 patients with reactive STS and no history of syphilis, 2,148 or 54.6 per cent showed negative results by TPI tests and were classified as BFP reactors. Sixteen hundred and ninety-five or 43.1 per cent had positive TPI tests and 91 or 2.3 per cent gave doubtful reactions (Table 1). Pregnancy and approximately 100 diseases have been implicated as important factors in bringing about the BFP reactions. In the present series the greatest number of BFP reactions occurred among pregnant women. Two hundred and ninety-two or 73.0 per cent of 400 sera from pregnant women gave negative reaction to TPI tests, 103 or 25.8 per cent positive reaction and 5 or 1.2 per cent doubtful reaction² (Table 2).

The most common diseases reported by the physician in which BFP reactions occurred were:

- Arteriosclerosis
Brucellosis
Cirrhosis of liver
Coccidioidomycosis
Diabetes mellitus
Lupus erythematosus
Malaria
Malinancy
- Periarteritis nodosa
Rheumatic fever
Rheumatoid arthritis
Sarcoidosis
Subacute bacterial endocarditis
Tuberculosis

In a study of 126 patients with a known history of treated syphilis, 95 or 75.4 per cent had positive reaction TPI tests, 20 or 15.8 per cent had negative reaction and 11 or 8.8 per cent had doubtful reaction. Of 99 patients who had a history of primary or secondary syphilis, 70 (70.7 per cent) had positive reaction to TPI tests, 20 (20.2 per cent) had negative reaction and 9 (9.1 per cent) had doubtful reaction. Six patients with congenital syphilis had positive TPI tests, while 19 or 90.5 per cent of 21 patients with negative reaction to STS but who had signs and symptoms referable to tertiary syphilis, had positive reaction to TPI tests. The two remaining patients showed doubtful reactions (see Table 3).

Treponema Pallidum Immune Adherence Test

TPI and TPIA tests were done on 143 sera carefully selected for the study. In a preliminary experi-

TABLE 1.—TPI Tests on Sera from 3,934 Patients Without History of Syphilis but With Positive Reaction to STS.

	No.	Per Cent
TPI Negative	2,148	54.6*
TPI Positive	1,695	43.1
TPI Doubtful	91	2.3
Total	3,934	100.0

* Biologic False Positive Reactors.

TABLE 2.—Results of TPI Tests on 400 Sera from Pregnant Women With Positive Reaction to STS.

TPI	Positive STS	Per Cent
Negative	292	73.0*
Positive	103	25.8
Doubtful	5	1.2
Total	400	100.0

* Represents Biologic False Positive Reactors.

ment conducted on 41 sera, perfect correlation was observed as between results by both tests—agreement on positive reaction in 21 sera and on negative in 20. In subsequent tests on 102 sera previously tested by the TPI procedure, 46 or 100 per cent of the TPI-positive sera showed positive reaction to TPIA tests, while 52 or 94.5 per cent of 55 TPI-negative sera were negative to TPIA test. The remaining specimen gave doubtful reaction by TPI test, positive reaction by TPIA.

Perfect correlation resulted when 26 “normal” persons with nonreactive STS and TPI tests were also TPIA-negative. Among 25 patients with a known history of primary or secondary syphilis, there was disagreement in only three cases. Inasmuch as the TPIA test was reactive in two of the three sera in which the TPI test was nonreactive, the sensitivity of the TPIA test would seem to be greater than that of the TPI test. In 25 cases in which the patient had no history of syphilis, had positive reaction to STS and negative TPI test results, there was only one case, that of a patient with an inguinal lymphadenopathy, in which the result of the TPIA test was positive, suggesting the possibility of primary syphilis. When 26 patients with no history of syphilis but with positive reaction to STS and to TPI tests were tested by the TPIA procedure, no disagreement was noted.

DISCUSSION

The TPI test is extremely valuable in differentiating BFP reactions from those due to infection with *T. pallidum*. The percentage of BFP reactors, as measured by the TPI test, has increased each year, indicating the important role of the TPI test as an aid in more accurate differential diagnosis. The trend may be due to an increased sensitivity of the

TABLE 3.—TPI Tests on Sera from 126 Patients With History of Syphilis.

Classification Treated Syphilis	Results of TPI Tests						Total
	Positive	Per Cent	Negative	Per Cent	Doubtful	Per Cent	
Primary and secondary.....	70	70.7	20	20.2	9	9.1	99
Tertiary (clinical) negative STS.....	19	90.5	0	0	2	9.5	21
Congenital	6	100.0	0	0	0	0	6
Total	95	75.4	20	15.8	11	8.8	126

various lipoidal or cardiolipin antigens, to variation in technical performance of the tests in different laboratories, or to an increase in certain degenerative diseases or abnormal physiologic states occurring among the population.

Studies designed to investigate the sensitivity and specificity of the TPI test rely to a large extent on obtaining dependable histories of syphilis and therapy from the patient and physician. Such information is often difficult to get and its accuracy must be considered in any evaluation of the TPI test. Although the 20 negative results by TPI test in patients with a history of primary or secondary syphilis may be explained on the basis of adequate therapy prior to the appearance of immobilizing antibodies, the foregoing possibilities must be considered.

The TPIA test, on the basis of results obtained to date, offers promise as a supplement to the TPI test. Inasmuch as a killed treponemal antigen may be employed, it can be more readily adapted for use in a routine clinical laboratory. Further studies concerning this test are in progress.

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Allergic Bronchial Asthma and Rhinitis

The Importance of Studies for Sensitivity to Foods

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FROM EXPERIENCE over a period of 30 years the authors have become convinced that sensitivities to foods and to inhalants are of about equal importance in bronchial asthma^{3,11,12,13} and allergic bronchitis and rhinitis. With adequate persistent study of these causes, especially food sensitivity, the evidence of bacterial sensitivity has been far overshadowed and that of secondary bacterial infection has definitely decreased. Assumed bronchiectasis and irreversible emphysema at times have been disproved.

Published statistics on 2,993 cases of bronchial asthma,^{3,4,5,11,12,13} and additional experience in a greater unpublished number, indicate that sensitivity to food is the sole cause in about 35 per cent of infants and children up to the age of 15 years; in approximately 20 per cent of adults up to 55 years of age; and in approximately 30 to 40 per cent of adults over the age of 55.

Sensitivity to foods is frequently associated with sensitivity to inhalants. Inhalant sensitivity is the sole cause of bronchial asthma and allergic rhinitis in from 20 per cent to 50 per cent of cases, the proportion depending upon age, location of residence and exposure to pollens, to animal emanations, to fungi and dust.

Confirmation of the importance of food sensitivity by other investigators requires the accurate and adequate use of trial diet with elimination diets used according to the authors' directions in a considerable number of patients for at least four to six months. Incomplete relief or failure of relief after inhalant desensitization not infrequently is due to failure to recognize food sensitivity as the sole or concomitant cause of bronchial asthma and allergic rhinitis. Often with control of such allergic reactivity to foods, desensitization to inhalants may be unnecessary or of minor importance. Nonspecific in contrast to specific desensitization may benefit some patients.

The authors' recognition of the importance of food allergy can be explained as follows:

1. Emphasis on the fallibility and errors in skin testing^{2,6,7,8,10,14,15} in the diagnosis of food sensitivity is most important. All patients dealt with by

• The authors consider sensitivity to foods and sensitivity to inhalants about equal in importance in bronchial asthma, allergic rhinitis and allergic bronchitis. Food allergens are the sole cause of bronchial and nasal allergic disease in 20 to 40 per cent of cases throughout life, including old age; inhalants are the sole cause in approximately an equal number; and sensitivity to foods and to inhalants are often associated.

Their frequent recognition of sensitivity to foods as a cause of disease, the authors believe, depends on: (1) The recognition of the fallibility of skin testing and the usual negative skin reactions to allergenic foods in chronic and recurrent bronchial asthma and allergic rhinitis. (2) The adequate use of trial diets, especially cereal-free elimination diet. (3) The realization that ingested foods remain in the body usually for two to four weeks and that the diet must be continued until symptoms have been relieved for two to three times as long as preceding relief between attacks.

the authors are tested with 50 or more foods by the scratch or puncture method, as well as with important inhalants. Observation is made for the occasional large quick swelling indicative of the kind of food sensitivity that produces symptoms shortly after ingestion of offending foods. In bronchial asthma and allergic rhinitis, however, allergic reaction to foods is usually cumulative or delayed and in such cases there usually is no dermal reaction, or at times equivocal or moderate reaction. Intradermal tests with foods are not done routinely because of the indefinite moderate or slight reactions which may occur that are not associated with clinical sensitivity. Moreover, a positive reaction is only significant when reacting foods repeatedly produce symptoms in a symptom-free patient. Hence, ingestion tests are not done until relief has been present for from two to eight or twelve weeks according to the previous daily, weekly, or monthly occurrence of symptoms. It must be remembered also that a large immediate scratch reaction inculcating a certain food may occur in a case in which there is also chronic cumulative sensitivity to other foods to which there are no reactions by scratch test.

2. It is of prime importance to exclude from trial diets foods which frequently produce allergic reaction.^{6,7,8} Such foods are eliminated from the

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authors' cereal-free elimination diet which is of special value in bronchial asthma and allergic rhinitis. This diet is modified by eliminating from it foods to which large scratch reactions occur or to which definite dislikes or disagreements exist. The patient must be given the list of foods he can eat and not a list of foods which must be excluded. Menus and recipes for the prescribed bakery products must be given.

3. Recognition of the frequency of allergic sensitivity to most or all cereal grains^{6,7,8} as well as to egg, milk, chocolate and, less often, to other excluded foods, is a large factor in the success the authors have had in controlling otherwise unrecognized hypersensitivity to foods. The importance of eliminating all cereal grains simultaneously with other common allergenic foods requires special emphasis. These diets and modifications have been published elsewhere.^{1,6,7,8,16}

4. It is also important to bear in mind that ingested foods remain in the body for from one to four or more weeks. Moreover, cellular changes from chronic allergic disease due to foods continue for days and even weeks after causative foods are eliminated. Maximum allergic response must be assumed in the diagnostic study of possible food allergy in any allergic disease. This requires total exclusion of all eliminated foods during the period of study. Since adherence to the diet must be absolute and the diet must sometimes be continued for weeks or longer, the elimination diets used by the authors always contain adequate protein, calories, minerals and vitamins to maintain nutrition and desired weight.

5. If the diet excludes all allergenic foods and food sensitivity is the sole cause of the disease present, some and at times all bronchonasal symptoms will decrease or disappear in one to three weeks. Then the diet must be continued another two to six weeks until relief is assured. If no relief occurs in two to three weeks, then it must be assumed there is associated allergic sensitivity to inhalants or to foods that are in the prescribed diet or, rarely, to infectants. This presumes, of course, that the diet has been strictly followed.

In regard to possible additional food sensitivity, it is well to suspect beef (especially if sensitivity to milk is proven or probable) as well as sensitivity to legumes, bacon, at times chicken, some or all vegetables or fruits, and infrequently white potato. After the patient is accustomed to eliminating foods as directed and encouraged by his physician through frequent conferences or letters, further cooperation with more restricted diets is usually obtainable if necessary. Thus, minimal diets containing lamb, tapioca, potato, sugar, salt, water, one or two vege-

tables and fruits, even lamb or beef, white potato and tapioca cooked with sugar and caramel flavoring, including up to 60 to 100 gm. of sugar, salt, water, and synthetic vitamins, may be justifiable for two to four weeks. With such foods taken in adequate amounts, if necessary between meals, nutrition and weight can be protected.

In the authors' experience, sensitivity to potato is infrequent. Potato is eaten one to two times daily, sometimes in large amounts, by many Americans, but apparently less often than in northern Europe, which may account for more frequent reported allergic reaction to potato there.

The authors' long recognition of the exaggeration of allergic reactivity to foods⁹ in the winter months, often causing recurrent or persistent so-called head-colds or bronchitis as well as bronchial asthma, along with the improvement of such reactivity to foods in inland areas, explains some of the climatic effects on allergic disease recorded in the literature.

Finally, the authors wish to restate the classical history of bronchial asthma due to sensitivity to foods,^{3,6,7,8,11,12,13} especially in infants and young children. We have long reported regular attacks for two to five days, usually preceded or associated with nasal symptoms for four to twenty-four hours, with interim relief or slight symptoms between attacks, resulting from recurrently activated reaction to foods rather than from infection. Temporary exhaustion of the reacting bodies to causative foods after attacks best explains the interim relief in spite of the daily ingestion of allergenic foods. During the summer months,⁹ attacks may be slight or absent, permitting a liberalized diet in some patients. This is probably due to the beneficial effect of ultraviolet radiation in cases of allergic response to foods, especially in bronchial asthma. The strict use of the cereal-free elimination diet,^{3,6,7,8} however, is necessary in the fall to late spring to prevent symptoms. With the proper diet, tolerance for allergenic foods may develop in children in from two to four years. Such tolerance less often develops in adults.

Attention is also called to the typical history of perennial nasal allergic disease requiring adequate study of possible allergic sensitivity to foods as a cause. Nasal congestion, frequent blocking of the nose, varying degrees of watery and especially mucoid discharge, aching and pressure in the nose and often in the antra, dull intraocular or frontal headaches, perennial in occurrence but at times exaggerated in the late fall, winter and early spring months, require the consideration of food sensitivity. The symptoms interfere with sleep and are active on arising, at times decreasing by noon and until late afternoon. Sneezing may or may not oc-

cur. Itching, which characterizes nasal sensitivity to inhalants, especially pollens, is absent, although tickling or crawling sensations may be present. The turbinates and nasal mucosa are edematous even to complete blockage.

In the authors' opinion, allergic sensitivity to foods is by far the major cause of recurrent nasal polyps, the necessity for surgical removal having been averted in many cases by the control of the allergic condition.

X-ray films of the antra show moderate to pronounced mucosal edema or even polyps, and frequently there is opacity due to these findings and to lack of aeration. Skin reactions by the scratch method usually are negative to foods and inhalants. Slight reactions are often nonspecific. Definite reactions to inhalants, if correlated with a history of probable allergic response to dust or other environmental allergens, and especially probable seasonal reaction to pollens may require environmental control and desensitization therapy. Indeed it is to be kept in mind that in some cases reaction to inhalants may be the sole cause of nasal allergic disease.

In bronchial asthma and perennial nasal allergic disease, therefore, food sensitivity should be studied when recurrent or persistent bronchial symptoms occur. A dietary history of food dislikes or disagreements and a history of exaggeration of symptoms in the fall to early spring months, especially in bronchial asthma, also suggest allergy to foods. If large scratch test reactions or a diet history suggests sensitivity to specific foods, eliminating them may at times give relief in from one to three weeks. Usually these reactions are absent or falsely positive, justifying a strict, adequate use of the authors' standardized cereal-free elimination diet and at times other minimal elimination diets. Sensitivity to foods cannot be exonerated until after adequate—at times rather prolonged—study of food allergy with the patient's full cooperation has been carried out.

In all cases, the recognition and control of the equally important allergic reaction to inhalants, and of the infrequent bacterial allergic disease, are required. Along with the control of reactions to foods and inhalants, symptomatic relief by the usual drugs and at times the concomitant use of corticosteroids, corticotropin, and especially prednisone or prednisolone is indicated. Use of such agents

can be reduced or discontinued as bronchial and nasal symptoms gradually decrease with antiallergic therapy. However, the use of hormones instead of adequate antiallergic study and treatment, with or without adjunctive drugs, is to be deprecated. Thus used they may do harm, the patient is deprived of the studies necessary for lasting relief, and they avoid the challenge the medical profession must continue to accept to discover underlying causes of allergic disease.

As with diet therapy in diabetes and peptic ulcer, elimination diets must be used for more than one to three months and in more than a few patients^{6,7,8} to attain experience and facility in their use.

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The San Francisco Earthquake and Fire

Public Health Aspects

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THIS YEAR is the golden anniversary of the San Francisco earthquake and fire. As we reflect on the medical and health problems of a cataclysm of fifty years ago, we should pay tribute to our valiant predecessors in the profession whose heroic efforts undoubtedly saved hundreds of lives then, and during this intervening half-century have saved thousands more from the curse of violence and disease. At the same time, we must pause to consider the present-day threats to our health and the many challenging medical problems that would face us in another disaster.

Accounts of some of the medical and health problems resulting from the San Francisco earthquake are well described in the official reports of the boards of health of the city and state for that year. Quoting the latter: "There were 709 deaths known to have resulted directly or indirectly from earthquake and fire, distributed as follows: San Francisco, 463; Santa Clara, 141; Sonoma, 72; Alameda, 12; and other counties 21. The deaths in Santa Clara County were mainly at Agnews State Hospital, and in Sonoma County mainly in the city of Santa Rosa. Most of the deaths in Alameda County and other counties occurred among refugees from San Francisco suffering from fright or exposure."

There were many other deaths from diseases, which, at least in part, may be attributed to the chaos. For example, during the two weeks following the quake there were 547 known fatalities from typhoid fever in San Francisco. There was probably an even greater number because reporting was far from complete. One may surmise that this infection was on the rampage, for 250,000 of the 400,000 residents of the city were rendered homeless. Quoting again: "The squares, public parks and vacant lots were packed with the stricken multitude, and without sanitary conveniences of any kind. Sick and well were confusedly packed together; water supply cut off; sewers broken and no protection from the elements, which were unusually severe for this time

of the year. . . . Uppermost in the mind of the Board [of Health] was the question of the water supply. . . . The Department [of Health] was in a dilemma. . . . Our means for the examination of water, milk and foodstuffs were totally destroyed, and a like condition existed in nearly every other available public or private laboratory, and analytical work seemed out of the question." Great effort was made to render the water and milk supplies safe . . . "yet the number of [typhoid] cases daily increased. A review of the ground revealed that some other factor was responsible for the continued spread of the disease. Inspection showed that the large public relief kitchens located in the camps were unscreened and open to the dirt, dust and invasion from flies; myriads of the latter were found in every portion of and upon everything in these kitchens. In many instances latrines were not far distant, and these were likewise uncovered and unscreened. Investigation and inquiry proved that many refugees were careless in the disposal of excreta, throwing it on adjacent surface soil. This became an added menace, as quite a number of the cases were of the ambulatory type. From one such patient, whose tent was in Garfield Square, were traced twelve cases.

"A serious difficulty confronted the city at this time in that the Sanitary Reduction Works, where all garbage had previously been incinerated, was a total wreck. For a period of ten days the city's garbage was taken to the burned district, and an effort made to incinerate it; this, however, proved unsuccessful, and finally arrangements were completed for its disposal at sea by means of barges. An average of seven hundred loads were removed daily. Considering the destruction of the system of the disposal of garbage, the entire population cooking in the streets, these streets filled with debris of all kinds, teams and wagons difficult to hire, a stupendous task was undertaken and accomplished in meeting and successfully coping with the above conditions.

"For the first twelve days after the earthquake and fire there were 509 dead animals removed from various parts of the city, including the burned area. These were incinerated. During the succeeding months to date, over seven hundred dead horses have been disposed of in like manner.

Address given at a symposium jointly sponsored by the San Francisco and California State Offices of Civil Defense on April 18, 1956, "California's Next Earthquake and Civil Defense and Disaster Operations."

Submitted April 23, 1956.

"On April 18 there were sixty-five cases of variola in the Isolation Hospital, and seven or eight patients quarantined in private houses. The number of cases of diphtheria, scarlet fever and measles were comparatively small. The typhoid fever cases numbered seven, apparently a very low record and due to the fact that reports of this disease are seldom received from the profession. As already stated, a rigid inspection was inaugurated at the outset to locate and place under control the developed cases, and every effort exhausted to track and keep under observation, the contacts. With people quartered in every available park, lot or street, and hundreds crowded in basements, stables and like places, the task was tremendous. Personal responsibility and thought of self were submerged, no doubt due to the terrors they had faced or the losses sustained. Another source of menace was a class of misguided people who have no faith in the doctrine of Aesculapius, but treat their sick after the manner of dogma. Illustrative of this is the case of a refugee living on Page Street, who was by chance found in the street suffering with variola, and in the advanced stage of desquamation. At this time he was engaged in peddling doughnuts in the various camps. He was quarantined in his residence, but too late, for not only did every one of the fifteen inmates, all of the same cult, fall victim to this disease, but forty other cases are directly traceable to him."

In retrospect, one may conclude that conditions following the earthquake and fire were as primitive as the military battlefields of those days. Then the army lost ten times as many soldiers from disease as from battle injury. If the same ratio existed in San Francisco following the earthquake and fire there must have been about 5,000 deaths from disease in addition to the 463 killed outright.

Without doubt, the fate of untold others would have been similar had it not been for the heroic efforts of the medical profession:

"The day following the commencement of the fire, a thorough organization for the protection of health was formed. Col. George H. Torney, Deputy Surgeon-General and a thorough sanitarian and organizer, represented the U. S. Army; Drs. James W. Ward (president), Simon, Harrison, Hassler, and Ragan, the City Health Commission; Drs. Martin Regensburger and N. K. Foster, the State Board of Health; and Dr. Sawtelle, the U. S. Public Health and Marine Hospital Service.

"Dr. Ward, as president of the City Health Commission, was given full power to control sanitary measures, and the control could not have been put into abler or more willing hands. Long before the fire was out, headquarters were established in Golden Gate Park, hospitals started, the city districted and each put under a responsible chief, the

camps were patrolled and inspected, toilets were established, and plans formulated for concentration in a single camp. As rapidly as possible a house-to-house inspection was made, all garbage cleaned up, people removed from unhealthful localities to those better adapted to their needs, and instructions issued about how to protect the healthfulness of the individual and camp. Cleanliness was insisted on and an earnest effort made to prevent the pollution of the soil."

We might take a moment to review the health record of San Francisco today as compared to 50 years ago. During this interval, the population of the city has doubled (785,000 as of July 1, 1954). The life expectancy at birth has increased from 50 to 67 years. Meanwhile, the crude death rate per thousand per annum has fallen from 17.0 to 11.6. Deaths from typhoid, diphtheria and smallpox have been reduced to zero. The death rate from tuberculosis has been reduced to about one-tenth of what it was. Even the death rates from the ordinary forms of violence have been curbed appreciably: Accidents, 100 to 61.1; suicides, 35 to 25.4; homicides, 15 to 4.8.

These and many other evidences of a healthier and longer-lived population are due to the great technical advances which have been made in the medical and health sciences since 1906. Then carbolic acid, introduced by Lister, was used for almost every antiseptic need. Now there are hundreds of effective disinfectants that have specialized uses. The chlorination of water, just being recognized at the turn of the century, today is accepted as an essential for the control of typhoid and other water-borne diseases. The campaign for "no spitting in public places" that was begun in those early days has been paying dividends ever since by reducing tuberculosis and other infectious diseases. In 1902 Landsteiner observed blood types or groups; ten years later several other scientists found the anticoagulants. These discoveries made transfusions possible and laid the foundations for the extensive use of blood, plasma, blood derivatives and substitutes in present-day surgical and medical emergencies. The active immunization against tetanus, which is common practice now, depended upon the discovery of toxoid by Ramon in 1923. The sulfonamides and antibiotics, which are so effective against a wide variety of infectious diseases, date from 1937. These and hundreds of other discoveries would seem to give us the technical "know-how" to meet almost any medical emergency today.

Nevertheless, we must pause and ask ourselves if we are really prepared for another disaster like that of April 18, 1906. One hesitates to answer conclusively. Our hospitals are just beginning to develop adequate disaster plans, and few have put them to

any sort of test. Coordinated efforts of medical and health agencies are still in the formulative stage. Education and training for the care of mass casualties is just beginning to perfuse the curricula of professional schools. There are still many ancillary medical workers who have received no formal instruction in first aid at all. We must confess that we are not as well prepared as we should be to meet these great natural disasters, much less to meet the catastrophic disasters of war.

No doubt, our failure to develop complete and effective organizational programs is the result of human frailties which we have not been able to alter materially during the last half century. There is still a pressing need to improve our intraprofessional and interprofessional relationships, and a need to replace petty jealousies and selfish interests with friendly cooperation and understanding. There will always be a need for the same kind of stuff that characterized some of the heroes of those trying bygone days. An editorial in the *California State Board of Health Bulletin* of April 1906, had this to say about one of them: "Dr. Ragan, Health Officer of San Francisco, claims to have made a great scientific discovery. It is nothing less than a 'sleeping sickness serum.' He warrants that one dose properly administered will remove all disposition to sleep and keep the patient at work for twenty hours a

day. He says that the long hours of faithful work performed by the San Francisco Health Commission were due to its use. They certainly did the work, but we have an idea that the doctor's serum consists of a deep interest in the health of the people. At any rate, Doctor, the *Bulletin* is at your disposal to inform the world of the truth, and if you succeed in inoculating every health officer with the same energy and success as were shown in San Francisco you will gain the gratitude of the people of the state."

Let us here and now rededicate ourselves to the remaining tasks. Thus, as we commemorate one grim golden anniversary in this Golden State of ours, may we also make the most of these peaceful "normal times" which are our golden opportunity to prepare for any eventuality.

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CASE REPORTS

Coexistent Coccidioidomycosis of the Meninges and Pulmonary Cavitation Due to *Coccidioides*

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THE FOLLOWING CASE is presented not as a refutation of existing opinion as to the good prognosis of coccidioidomycosis when pulmonary cavitation occurs, but rather because it is one of the few exceptions. Coccidioidal meningitis was associated in the dissemination.

CASE REPORT

A 28-year-old Caucasian man, foreman of a ranch, was referred to the contagious unit of Kern General Hospital, September 12, 1954, with chief complaint of generalized headache and stiff neck of one week's duration. Nausea and vomiting had been present for four or five days and the patient could retain only liquids. A specimen of spinal fluid examined by the referring physician on the day of admission contained 720 cells per cu. mm., the majority lymphocytes. The patient was lucid and had no other complaints. Born in Oklahoma, he had come to Kern County in 1931. In 1944 he had had a cranial fracture, with loss of consciousness, and apparently had recovered completely.

The patient was well developed and slender. Loss of weight was evident and the patient appeared to be both acutely and chronically ill. There was pronounced nuchal rigidity and the knee jerks were exaggerated but no other neurological abnormalities were noted. The lungs were clear and no abnormality was observed in an x-ray film of the chest.

The patient was placed at complete bed rest and fluids were infused by vein the first day. On the second day the patient was able to retain a liquid diet and on the third day was placed on a regular diet and was asymptomatic. A specimen of spinal fluid obtained on the fourth day contained 448 cells per cu. mm.—88 per cent lymphocytes. The total protein content was 122 mg. per 100 cc. and the sugar content 40 mg. per 100 cc. There was no growth on a culture of the material. On the fifth day the patient felt well and, insisting that he could lie in bed as well at home as in the hospital, he returned

home under the care of the physician who had had him admitted to hospital. Five days later the patient was readmitted in a state of confusion and lethargy with episodes of vomiting. These conditions had begun earlier that day. The temperature was 99.2° F. Blood pressure was 110/60 mm. of mercury. The lungs were clear to auscultation. There was pronounced nuchal rigidity but no other neuromuscular abnormality. The spinal fluid was slightly cloudy and the pressure was elevated. The cell content was 496 per cu. mm.—72 per cent lymphocytes. The total protein content was 161 mg. per 100 cc. and the sugar 24 mg. per 100 cc. No organisms were seen on microscopic examination and none grew on a culture.

The following day the patient was much improved and was able to eat a regular diet. The low-grade fever persisted. He was given streptomycin, 1 gm. daily for two weeks, and para-aminosalicylic acid 12 gm. daily for one month. From then until October 4 the patient had periods of confusion, and from that date on he was never rational. At times he would answer questions correctly, but with no evidence of comprehension. He slept a great deal of the time.

On October 6 spinal puncture was done and the pressure was 230 mm. of water. The fluid was slightly cloudy. It contained 280 cells per cu. mm.—90 per cent lymphocytes. The total protein content was 132 mg. per 100 cc. and the sugar content 27 mg. per 100 cc. No organisms were seen microscopically and none grew on routine culture or on Sabouraud's media. The gold curve was 0002343100 and the result of a Wassermann test was negative for syphilis. In an x-ray film of the chest (Figure 1) a cavity 8 cm. in diameter was observed in the apex of the left lung.

On October 7 the patient had a sudden acute episode, with right facial paralysis, spasticity in the right arm and leg and hyperactive reflexes in both arms and the right leg. Babinski's sign was present on the right. The skin was clammy. The following day none of these abnormalities was present.

After October 13 the patient began to have projectile vomiting and Levin-tube feeding became necessary.

At about this time pellicle formation typical of *Coccidioides immitis* was noted in a specimen of spinal fluid that had been aspirated October 6, and

Submitted November 18, 1955.



Figure 1.—X-ray of chest showing typical thin-walled tension cavity in the left apex.

allowed to incubate at room temperature in a stoppered glass tube.

The patient became progressively worse, with weight decreasing and lethargy increasing. The temperature gradually became higher (up to 103° F.) and respirations increased to 60 per minute. In an x-ray film of the chest taken November 4, no change in the tension cavity was noted. On November 16 there were rales present in both lung bases. No change was observed roentgenographically. The patient died November 23.

Early in this patient's illness several diagnoses were considered including the encephalitides, coccidioidal meningitis and tuberculous meningitis. With those in mind numerous laboratory studies were done. Results of first and second strength Mantoux skin tests were negative. A first strength skin test with coccidioidin on September 29 was negative, a second strength on October 4 was equivocal and when repeated on October 18 was strongly positive. Gastric contents obtained on October 12, 13 and 14 were negative on culture for acid-fast bacilli. Specimens of gastric contents obtained on those days were all positive on November 30 for *Coccidioides immitis*. Virologic studies done at the California State Laboratory on specimens of blood obtained September 13 and October 1 for Western equine encephalitis, St. Louis encephalitis, lymphocytic choriomeningitis, and mumps encephalitis were all negative. Coccidioidal complement fixation tests done October 5 gave a reaction of 4 plus in dilutions up to 1:16 and equivocal reaction in 1:32 dilution. Results of precipitin tests were negative. Similar tests were done on October 13 and 26 and the results were the same except that on the latter date the complement fixation was 4 plus in 1:32 dilution. Serologic tests were done by the laboratory of the University of California School of Public



Figure 2.—Cavity measuring 7 cm. in diameter in apex of the left lung.

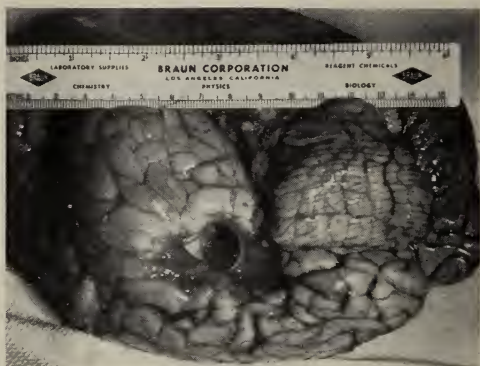


Figure 3.—Brain showing cavity in the inferior surface of the right temporal lobe.

Health also. Complement fixation was 4 plus through 1:16 dilution and 2 plus in the 1:32 dilution. Results of precipitin tests were negative. Blood cell counts throughout the illness were within normal limits except for an elevation in the number of leukocytes. The proportion of eosinophils was normal. Except for an occasional leukocyte, no abnormalities were noted in the urine at any time. The blood urea nitrogen, sodium and potassium were normal each time determined. Total protein content also remained normal, with albumin 5.2 gm. and globulin 2.4 gm. per 100 cc.

Most of the treatment was supportive. However, after the specimens of gastric contents were obtained and pending the cultures it was decided to give streptomycin and PAS.

At postmortem examination the following observations were made: The right lung weighed 450 gm. and the left lung 620 gm. There were pleural adhesions bilaterally—more so on the right. There was a cavity 7 cm. in diameter in the apex of the left lung (Figure 2).

The brain was edematous and weighed 1,320 gm. There was a cavity (Figure 3) in the inferior surface of the right temporal lobe, and the pia arachnoid was thickened in the region of the pons. The ventricles were not enlarged and there were no anomalies of the circle of Willis. There was no evidence of hemorrhage and no purulent material was present.

In microscopic study of sections of the lung it was noted that several bronchi had foci of lymphocytes at the periphery. There was an increase in connective tissue in several places and granulomata were present. In some of the latter there was caseation necrosis in the center. Giant cells of Langhans type were also found in the granulomata. Spherules were seen in specially stained preparations.

A few granulomata with Langhans giant cells were found in the fibromuscular stroma of the prostate, and spherules were also seen in the gland in specially stained preparations. The pia arachnoid of the cervical cord was infiltrated with lymphocytes and several granulomata were present. A spherule with endospores was seen in the connective tissue near a Langhans giant cell. There was congestion of the intrinsic blood vessels and dilation of the perivascular spaces of the cerebellum and similar findings of granulomata in the pia arachnoid. In the right temporal lobe of the brain there was a large area of liquefaction necrosis. Granulomata were observed in the pia arachnoid. There were also spherules with endospores and Langhans giant cells. Granulomata were noted in the choroid plexus of the midbrain and there was widening of the perivascular spaces and congestion of the intrinsic vessels.

Coccidioides immitis did not grow on cultures of material from the brain.

DISCUSSION

As far as could be ascertained there are in the literature only two cases in which coccidioidal pulmonary cavitation and coccidioidal meningitis were coexistent. Jenkins and Postlewaite¹ reported one case and mentioned another reported by Smith, Beard and Saito.² There seemed to be nothing in the present case that would help explain why pulmonary cavitation and dissemination of coccidioidomycosis rarely are concomitant.

SUMMARY

A fatal case of coccidioidal meningitis with co-existent coccidioidal pulmonary cavitation is presented. Positive reaction to coccidioidin skin tests, positive complement-fixation on coccidioidal serological tests and microscopic findings of spherules with endospores in the pia arachnoid substantiated the diagnosis. Negative results of viral serological examinations of Manitoux skin tests and cultures for acid-fast bacilli helped to rule out tuberculosis and the viral encephalitis.

422 Vernon Street, San Francisco 27 (Nilssen).

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Congenital Hepatomegaly

Report of a Case

LEO van der REIS, M.D.,
ALBERT G. CLARK, M.D., and
VICTOR G. McPHEE, M.D., San Francisco

IN MOST of the reported cases of congenital anomalies of the liver the abnormality is in the number of lobes; rarely, cases of accessory livers are reported.

Congenital anomalies are related to a disturbance of the normal embryological growth. Normally the primordial outgrowth destined to become the secretory and duct system of the liver, together with the gallbladder, arises ventrally from the entodermal lining of the gut and is known as the hepatic diverticulum. As the hepatic tubules grow in size and number, they extend between the two layers of the splanchnic mesoderm, which constitutes the ventral mesentery at this level. As growth continues, the two layers are separated over the surface of the liver and give rise to the fibrous connective tissue capsule of the liver, as well as to the interstitial con-

nective tissue of the liver lobules and smooth muscle layers of the duct system.

One of the congenital anomalies of the liver, Riedel's lobe, was described by Riedel⁶ in 1838 as a "tongue-shaped projection descending from the anterior surface of the anterior margin of the right lobe of the liver to below the umbilicus." Unlike appendicular lobes of other types, Riedel's lobe is always associated with gallbladder enlargement.

Accessory livers have been described in the pleural cavity,⁵ in the greater omentum,⁴ in suspensory ligament³ and in an amniotic hernia at birth.¹

Another anomaly of the liver, heteroptosis, was described by Eppinger² as a phenomenon similar to a "floating" spleen or kidney. In this condition the degree of ptosis may vary widely. In almost all cases of heteroptosis, relaxation of the anterior abdominal muscles, with some degree of diastasis of the recti muscles, is present. Herniation of the liver mass through the anterior abdominal wall has been observed in some cases, and displacement of other abdominal organs may occur. In the majority of cases, the liver is freely movable and can easily be returned into its normal position beneath the dia-

Submitted December 14, 1955.

phragm, while the mass tends to slide down again on deep inspiration.

Most anomalies of the liver do not cause symptoms, but are observed at autopsy. In cases in which symptoms do occur, they may vary from acute abdominal signs to the presence of a nontender, freely movable mass in the abdomen. In the case here reported they were of the latter order.

REPORT OF A CASE

A 2-year-old boy was observed by one of the authors because of poor eating habits. On examination a mass was felt in the left upper quadrant of the abdomen. The mother had not noticed this mass.

The patient was of normal growth and development for his age. The skin was pale, and it was noted that the skin became mottled when the child stood for a short time. The chest was of the funnel type, with pronounced flaring of the diaphragm. The abdomen was protuberant. Some diastasis of the recti muscles was present. The mass in the left upper quadrant of the abdomen was sharply defined and freely movable. It extended from approximately 2 cm. to the right of the midline at the right costal margin to a point approximately 4 cm. above the left iliac crest. Upon application of slight pressure in the left costovertebral area, the outline of the point of the mass pressing against the anterior abdominal wall could be seen.

Erythrocytes numbered 4,120,000 per cu. mm. of blood and the hemoglobin content was 12.0 gm. per 100 cc. Leukocytes numbered 11,400 per cu. mm. Cell fragility was within normal limits. The platelet count was 271,000 per cu. mm. The serum protein content was 6.2 gm. per 100 cc., and the albumin globulin ratio was 4.2:2. No abnormality was noted in biopsy of a specimen of bone marrow. Results of urinalysis were within normal limits. Upon pyelographic examination a bifurcate kidney and double ureter on the left were observed, and a configuration interpreted as an "unsuccessful" attempt at doubling on the right. Renal function appeared to be good. A gastrointestinal study with barium showed an essentially normal upper gastrointestinal tract and the presence of a large mass covering almost half of the left lumbar area. No esophageal varices were seen. No displacement or pressure on other organs was noted in the x-ray studies. The absence of the hepatic shadow on the right side of the abdomen was commented upon.

Exploratory laparotomy was done and the left lobe of the liver was found to extend across the entire abdomen from the midline to 5 cm. below the left costal margin. The right lobe was extremely small and extended for only 2 cm. to the right of the midline. The ligamentous attachments were in normal position. The gallbladder was also in its normal place, but was enlarged. From the left margin of the left lobe, a tongue-like projection was found, extending downward as far as the left iliac crest. Biopsy of specimen of the liver was done and no abnormality was noted. No other abnormalities

were found at the time of exploration of the peritoneal cavity. The patient did well postoperatively and was discharged from the hospital.

SUMMARY

The case presented is one of congenital hepatomegaly in which the left lobe of the liver was enlarged and had an appendicular lobe attached to it. The conditions were similar to those described by Riedel,⁶ except that the hepatic anomalies were on the left instead of on the right side of the abdomen. In addition, a bifurcate kidney and double ureter were present on the left side.

74 San Jacinto Way, San Francisco 27 (van der Reis).

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Paraffinoma of the Penis

JAMES A. MAY, M.D., and
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INJECTIONS OF PARAFFIN were first done on organs of the male urogenital tract. Gersuny³ began the practice in 1899 by injecting paraffin into the scrotum to replace testicles removed because of tuberculosis. Successful results were reported. Later, paraffin injections were used to advantage in the treatment of urinary incontinence; the vesical mucous membrane was infiltrated with paraffin. The procedure was adopted widely and was extended to include injections for hernias, atrophic rhinitis, cleft palate, permanent separation of divided nerves, and to improve or alter facial deformities.

Heidingsfeld⁴ in 1906 first described tumors resulting from paraffin injections. Quéruu and Pérol⁵ summarized six cases of paraffinoma of the penis from the foreign literature. In five of the six cases the tumors were caused by vaseline injections given to enlarge the penis. All five patients lost erectile power, probably because of the inelastic sclerotic shell of fibrous tissue which developed. In 1949, a case of paraffinoma of the penis was reported by Bradley and Ehrsgott.¹ This was believed to be the

Submitted January 11, 1956.



Figure 1.—The penis irregularly encased in paraffin, approximately one and one-half centimeters in thickness.

result of external application of petrolatum associated with occupational exposure to cutting oil. In the American literature there were no reports of paraffinoma owing to purposeful injection. In the eighth chapter of *Urological Oddities*,² reports of 95 bizarre phallic conditions are cited, but none of paraffinoma is mentioned.

The case here reported is that of an extensive paraffinoma of the entire penile shaft. The patient, a 37-year-old white man, sought medical evaluation of a paraffin implant under the skin of the penis. At the age of 30 the patient had consulted a physician about premature ejaculation on intercourse. He had had various treatments for the condition without success. The physician suggested a paraffin injection into the penis and the patient said the injection was done in one operation. The paraffin was melted, placed in a syringe with a large needle, and forced under the penile skin. It encased the penis above Buck's fascia and underneath the skin.

The patient said that thereafter erection was unsatisfactory and painful, and premature ejaculation was not relieved. The chief complaints at the time he was observed by the authors, six years after the paraffin "treatment," were of pain on erection, difficult intercourse, decided deformity of the penis and fear of cancer.

On physical examination the penis was noted to be abnormally large in circumference (Figure 1). It was hard and firm to touch and painful on heavy palpation. The skin was depigmented in many areas. The paraffin irregularly encased the entire shaft of the penis. This encasement measured ap-



Figure 2.—The denuded shaft of the penis inserted into the surgical pocket of the scrotum.



Figure 3.—The penis lifted out of its scrotal bed, with completion of the pedicle graft and scrotal closure.

proximately one and one-half centimeters in thickness and caused grotesque penile deformity. There was no enlargement of the inguinal lymph nodes. A diagnosis of paraffinoma of the penis was made. The first procedure in a two-stage skin graft, utilizing the anterior surface of the scrotum after the method of Reich,⁶ was carried out. The entire penis was completely denuded of skin, and approximately one and one-half centimeters of normal skin remaining at the base of the penile shaft was pre-

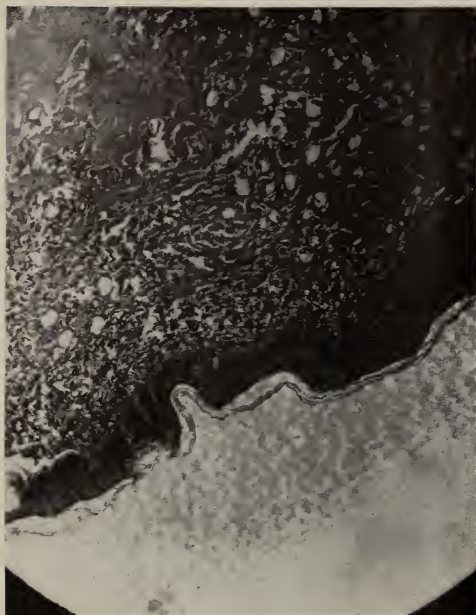


Figure 4.—Numerous foreign body giant cells present in the tissue excised from the penis.

served. Following denudation of the penile shaft, transverse incisions were made at the proximal and terminal ends of the scrotal sac. The entire skin between these incisions was undermined and the denuded shaft was inserted into the surgical pocket (Figure 2). The skin margins of the scrotum were then approximated to the cut skin edges at the base and the end of the penis. Mattress sutures were placed through and through the skin under the shaft and were tied over rubber tubes. This maintained the scrotal skin in direct approximation over three-fourths of the penile surface.

Eight weeks later the second stage of the operation was done. Parallel longitudinal incisions were made in the scrotum, lateral to the outer borders of the imbedded shaft. The penis was lifted out of its scrotal bed, and the skin flaps were approximated under the shaft, thus completing the pedicle graft. The scrotum was closed along the midline without difficulty (Figure 3).

The pathological report of the excised tissue noted that the dermis was occupied by a series of lipid spaces. These spaces were surrounded by histiocytes, with dense overgrowth of acellular scar tissue. Some of the spaces showed characteristic

staining with Sudan IV, and some did not—the latter being typical of lipid hydrocarbons. There were numerous foreign body giant cells present (Figure 4).

The tissue was subjected to chemical extraction and analysis. The appearance of the alcohol-treated lipid was quite similar to that of paraffin, but on appearance alone it might have been white beeswax. The nonsaponifiable fraction proved to be practically insoluble in cold alcohol, and only slightly soluble in boiling alcohol. The melting point was 38° to 40° C. before treatment with alcohol, and 40° to 42° C. after treatment. The relative insolubility in hot alcohol and the low melting point are characteristic of paraffin, since it is insoluble in water or alcohol and usually melts around 50° C. It is also available with higher or lower melting points. Beeswax is soluble in hot alcohol and melts at 62° to 65° C.

When the patient was last observed the penis was completely covered with normal skin, free of paraffin, and it was a normally functioning organ. Because of the skin used from it, the scrotum was smaller than before, but was entirely adequate.

SUMMARY

In a 37-year-old male with paraffinoma of the penis, the principal symptoms were pain upon erection, grotesque appearance, difficult intercourse and fear of cancer. At operation the penile shaft was denuded to free it of skin infiltrated with paraffin, and Buck's fascia was exposed from the glans to the base of the penis. Repair was effected by a two-stage procedure. The penis was buried under the scrotal skin and after eight weeks the shaft, with the attached scrotal skin, was released. The operative procedure was successful and the patient had a satisfactory result.

2001 Fourth Avenue, San Diego 1.

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California MEDICINE

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EDITORIAL

Hospital Accreditation

For many years the American Medical Association, through its Council on Medical Education and Hospitals, performed a valuable public and professional service in inspecting and evaluating the hospitals of the country. The purpose of such evaluation was primarily to improve standards of medical and hospital care and to qualify hospitals for intern and resident training. In 1920 the American College of Surgeons began a similar inspection and rating service the purpose of which was "to create in the hospital an environment which will assure the best possible care of the patient."

These two programs operated side by side—and in great harmony—for 31 years. Then, in 1951, the American College of Surgeons determined that the costs of inspection and rating were too heavy and announced the discontinuance of its program.

With this announcement the entire burden of hospital inspection and accreditation fell on the shoulders of the A.M.A. despite the fact that other bodies were deeply concerned with these services.

In December, 1951, a joint effort was created in the form of the Joint Commission for the Accreditation of Hospitals. The participating bodies were the A.M.A., the A.C.S., the American College of Physicians, the American Hospital Association and the Canadian Medical Association. These five organizations agreed to share a joint budget, apportioned in varying shares, and to work together for the maintenance of sound standards and the continuation of a system of hospital accreditation. The interest of the hospitals in this program is indicated by the fact that the American Hospital Association agreed to underwrite seven-twentieths of the budget. The A.M.A. took on another six-twentieths, the American College of Surgeons and American College of Physicians agreed to handle three-twentieths

each and the Canadian Medical Association one-twentieth.

The Joint Commission apportions its voting strength on the same basis as its financial support, and each organization names its own commissioners to serve on the 20-man board.

Since the formation of the Joint Commission in 1951 several problems have arisen to plague one or another of the several groups represented. Physicians have voiced their dissatisfaction with some of the regulations of the commission, and hospitals have had their own criticisms. It early became apparent that the original combination of requirements, rules, regulations, etc., of five different groups had to be compromised into one workable set of rules to govern all. As often happens in compromises, inequities for one or another participant arise and, in time, become aggravated.

This is exactly what happened in the American Medical Association a year ago, when six resolutions, each from a different state, were presented to the House of Delegates. Each resolution sought to correct a specific alleged deficiency in the Joint Commission program.

The A.M.A. House of Delegates decided, without controversy, that the subject was so broad that special study was needed. Accordingly, a special committee was named a year ago to study all facets of the hospital accreditation program, especially those brought out in the resolutions before the House. This committee was instructed to report back to the A.M.A. House of Delegates.

That report was brought in prior to the June A.M.A. meeting and its recommendations were acted upon in an atmosphere of both relief and commendation. It was evident that the members of the House were agreed upon the thorough manner in which the special committee had surveyed the problem and upon the recommendations made to meet

the several situations which had aroused the rash of resolutions a year earlier. It was particularly noted that the special committee had reported that while it did find some dissatisfaction with the functions of the Joint Commission, the dissatisfaction was "not as widespread geographically as the committee had been led to believe" and that, moreover, much of the criticism was based on misunderstanding and misinformation.

Without enumerating the 17 recommendations of the special committee—all approved by the House—it is worth pointing out the effect of some of the more important items.

First, the committee recommended that the accreditation of hospitals be continued. It also recommended that general practice sections in hospitals should be encouraged. It stated that the Joint Commission should not be a punitive body and should not concern itself with the number of hospital staffs to which a physician might belong.

On the administrative side, the committee made recommendations which permit the smaller hospital to maintain high standards without having to operate on a comparable basis with the larger metropolitan hospitals. It likewise urged that the hospital inspectors, heretofore employed by their respective bodies, become the employees of the Joint Commission and that they be under the Commission's supervision. At present, these inspectors are employed by the several member organizations and apparently most of them feel a loyalty to their own groups, which may not be in the best interests of the combined effort. The special committee called attention to the fact that adoption of its recommendations would have no bearing on the inspection for approval for residencies and internships, which still will be a function of the A.M.A. only.

One additional recommendation of great importance to physicians is worthy of a verbatim report. It says: "Staff meetings required by the Joint Commission are acceptable but attendance requirements should be set up locally and not by the Commission." This recommendation, if adopted by the Joint Commission, would free many physicians from compulsory attendance at staff meetings which might, in accordance with the particular situation, be completely superfluous—neither administratively nor scientifically worth the time required of those forced to attend. Here, if final approval is given, will be the green light for hospitals and their staffs to set up attendance requirements based on actual needs and merits rather than on arbitrary standards demanded by "foreigners."

In addition to the approved recommendations of the special committee, the A.M.A. House of Delegates approved further suggestions of its reference committee, which would urge the Joint Commission to study the problems of the general practitioner on hospital staffs and to assure hospital privileges to staff members in accordance with their demonstrated ability and qualifications.

It should be borne in mind that these recommendations are only those approved by the A.M.A. House of Delegates. They must still be transmitted to the Joint Commission on Accreditation of Hospitals and must be approved by that body before they can become effective. However, with physicians holding 13 of the 20 voting posts on the Joint Commission, it would seem likely that final approval of these suggestions will be given. When and if such approval is voted, local autonomy will have gained a further foothold and a more realistic approach to hospital accreditation will have been born.



Letters to the Editor...

EVERY ENCROACHMENT upon the ethical practice of medicine, no matter what specialty is involved, eventually acts to the detriment of both profession and public. Attention is, therefore, called to the mode of operation of lay allergy testing laboratories and allergy consultation services.

To understand the objections to such laboratory practices and services, one must be aware of the methods and practices employed by the allergy specialist. A careful allergy history is first taken, followed by a complete physical examination, including necessary laboratory tests. If allergy tests are deemed advisable, the type, number, and assortment are planned for the individual. These tests are performed by the physician himself or by a trained assistant under his direct supervision, employing fresh, potent, sterile antigens. Reactions are read by the allergist himself. If constitutional reactions occur, the physician is present to diagnose and institute appropriate therapy. The results of such tests are correlated with the clinical data. If desensitization therapy is indicated, the allergist prescribes or furnishes the antigens. The size and timing of dosage are recommended, based on the knowledge of the antigens and the patient. The patient thus receives integrated treatment. Such service has always been available both on a referral and consultation basis.

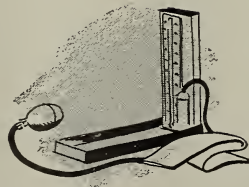
By way of contrast, when a physician is not in direct charge, which is the situation in lay allergy testing laboratories and allergy consultation services, there is no supervision of the potency, sterility, or nonspecific irritating qualities of the testing materials used. Tests may even be performed in the presence of unrecognized infection or dermatographia. Individuals with training below the standard deemed

necessary by allergists read the reactions, and the results are often considerably at variance with what a specialist obtains on the same patient. Lay laboratories do not perform intradermal tests, desiring to avoid legal difficulties, but such tests are often necessary. Although a report of the tests may be made to the referring or cooperating physician, the actual prescription, dosage, and schedule of treatment is usually recommended by the testing laboratory or by a separate manufacturing laboratory without knowledge of the patient's degree of reactivity to the treatment materials to be used. Thus the patient does not receive integrated diagnosis and treatment. When poor results are obtained, discredit is reflected on the medical profession in general and unwarrantedly on the specialty of allergy in particular.

Physicians who patronize a nonmedical allergy testing service fall into two groups. The majority are practitioners who have not realized the facts or pondered their significance. The minority are those motivated by friendship, financial gain, or the "hold onto the patient at any cost" attitude. For the latter, it should be emphasized that consultation as well as referral services are available by qualified allergists at fees comparable with or less than those charged by lay laboratories.

Although ambiguities and loopholes in our present legislation affecting medical practice may allow lay allergy testing and consultation services to exist, the Allergy Association of Northern California feels that the interests of both the public and the profession are better served by utilization of allergy specialists.

THE ALLERGY ASSOCIATION OF
NORTHERN CALIFORNIA



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 418th and 419th Meetings of the Council, Ambassador Hotel, Los Angeles, April 28 to May 2, 1956.

418th Meeting

The meeting was called to order by Chairman Lum in the Frenchette Room of the Ambassador Hotel, Los Angeles, at 9:30 a.m., Saturday, April 28, 1956.

Roll Call:

Present were President Shipman, President-Elect Charnock, Speaker Doyle, Vice-Speaker Foster, Secretary Daniels, Editor Wilbur and Councilors West, Wheeler, Loos, Wadsworth, Pearman, Harrington, McPharlin, Sherman, Lum, Bostick, Teall, Kirchner, Reynolds, Varden, Heron, Carey and Rosenow.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Gillette and Clancy of C.M.A. staff; legal counsel Hassard; Messrs. Ben H. Read and Eugene Salisbury of the Public Health League of California; county society executive secretaries Scheuber of Alameda-Contra Costa, Jensen of Fresno, Young of Los Angeles, Bannister of Orange, Marvin of Riverside, Foster of Sacramento, Neick of San Francisco, Thompson of San Joaquin, Wood of San Mateo, Donovan of Santa Clara and DeVere of Stanislaus; Messrs. Fred O. Field and E. E. Fitzgerald of the Los Angeles County Medical Association; Doctors A. E. Larsen and William Gardenier and Messrs. K. L. Hamman and Etchel Paolini of California Physicians' Service; Mr. John Hedback of the American Medical Education Foundation; Doctors Malcolm H. Merrill, John W. Cline, Bradley Brownson, Thomas Elmendorf, William Chiappella, Joseph F. Sadusk, Jr., John R. Upton, Fred O. Cooley; Mr. Rollen Waterson, and others during all or a part of the recessed sessions.

1. Minutes for Approval:

(a) On motion duly made and seconded, minutes

of the 417th Council meeting, held March 24, 1956, were approved.

(b) On motion duly made and seconded, minutes of the 257th Executive Committee meeting, held March 24, 1956, were approved.

2. Membership:

(a) A report of membership as of April 23, 1956, was received and ordered filed.

(b) On motion duly made and seconded, 262 members who had become delinquent and whose dues had since been received were voted reinstatement as active members.

(c) On motion duly made and seconded in each instance, two applicants were voted Retired Membership. These were: Walter Albert, Los Angeles County, and Otto F. Krebs, San Francisco County.

(d) On motion duly made and seconded in each instance, 21 applicants were voted Associate Membership. These were: Walter B. Brown, D. K. Freedman, Ernest K. Goodner, Alameda-Contra Costa County; Donald E. Casad, Fresno County; Warren L. Jones, Byron C. Mork, Jr., Bertrand Tenenbaum, Los Angeles County; Harry March, Placer-Nevada-Sierra County; Edward B. Butler, Jr., Richard A. Young, Sacramento County; Lawrence L. Hody, San Diego County; Frederick L. Eldridge, Martin J. Seid, Lorraine H. Smookler, Francis S. Smyth, San Francisco County; Harvey F. Hendrickson, Gordon F. Williams, San Mateo County; Stanley J.

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417 South Hill Street, Los Angeles 13 • Phone MAdison 6-0683

Milestone, Santa Clara County; Abe M. Cowan, Charles E. Taylor, Tulare County; George Alfred McGuinness, Ventura County.

(e) On motion duly made and seconded, reductions of dues were voted for 11 applicants for reasons of illness or postgraduate study.

(f) A question of eligibility for associate membership in one county society for a member who had previously maintained active membership in another county and had moved was referred to legal counsel for opinion.

(g) On motion duly made and seconded, the selection of a referee requested by a county society to conduct a disciplinary hearing was approved.

3. *Cancer Commission:*

(a) Doctor John W. Cline reported that the tumor registry maintained in California through the assistance of state and federal funds faced the loss of federal support as of June 30, 1957, and that legislation was in preparation to provide for the continuation of such support. He asked that the Council approve such legislation in principle, and, on motion duly made and seconded, it was voted to give such support.

(b) Doctor Cline also urged that a study be made of the possible means of limiting the licensure of physicians who persist in using discredited forms of therapy with cancer patients. On motion duly made and seconded, it was voted to study this matter in conjunction with the legislative committee and legal counsel.

4. *American Medical Education Foundation:*

Doctor John W. Cline suggested for the Council's consideration that the dues of the Association be increased to include a contribution of \$25 per active member for the American Medical Education Foundation, subject to a similar decrease if the American Medical Association should enact a similar contribution as a part of its dues.

5. *Medical Review and Advisory Board:*

Doctor Bradley Brownson of San Mateo reported that the public relations committee of the San Mateo County Medical Society had approved the findings of the study made in that county on physician-patient relationships and stated that this committee would like to see the Association approve the report and continue its use in other programs.

Doctor Joseph F. Sadusk, Jr., reported on the studies of the Medical Review and Advisory Board on recent increases in the incidence of cases and the sums asked. He also presented the proposed budget for the board and discussed the safety program envisaged as a part of the board's work.

6. *Budget for Fiscal Year Starting July 1, 1956:*

On motion duly made and seconded, the Council

approved a budget for the 1956-1957 fiscal year submitted by the Auditing Committee.

7. *State Department of Public Health:*

Doctor Malcolm H. Merrill, State Director of Public Health, reviewed the current status of Salk poliomyelitis vaccine supplies. He also reported on the control measures being undertaken to prevent the spread of rabies and stated that several counties were now under a quarantine to provide such control, especially among skunks and other wildlife.

In reply to a question on the allocation of funds in aid of hospital construction, Doctor Merrill reported that about \$5,000,000 would be available in the coming year for this purpose and that more than \$100,000,000 in applications for such funds were on file.

8. *Committee on Mental Health:*

Doctor Alfred Auerback, a member of the Committee on Mental Health, discussed the differences of opinion between psychiatrists and psychologists and urged that the public be educated in this difference. Doctor Auerback also reported on the research planned by the State Alcoholic Rehabilitation Commission and the establishment of new treatment centers. He also discussed proposed legislation for establishment of community mental health centers.

Recess:

At this point the Council was declared in recess (4:45 p.m.) until 7:30 a.m., Sunday, April 29, 1956, in the same room.

9. *Commendation of Physicians in Flood Areas:*

On motion duly made and seconded, it was voted to add to the report of the Council to the House of Delegates a resolution in praise of the physicians who had rendered valuable public service during the winter floods in their respective areas.

10. *Commission on Public Policy:*

Doctor Dan O. Kilroy, chairman of the Commission on Public Policy, reported that the Committee on Legislation had studied a proposal brought before the House of Delegates in 1955, asking an investigation of the possibility of seeking legislation to provide for free choice of physicians by injured workmen. On completion of a full study, the committee voted to recommend that no further action be taken on this proposal.

Doctor Kilroy also reported on a recent municipal election, in which the people had voted to maintain high standards in their local hospital.

11. *Budget for 1956-1957:*

A motion was made and seconded that the Association dues for 1957 be established to provide a contribution of \$25 per active member for the American Medical Education Foundation. The mo-

tion was lost on vote and the budget previously approved was confirmed for presentation to the House of Delegates.

Recess:

At this point, 8:45 a.m., the Council was declared in recess until 7:30 a.m., Monday, April 30, 1956.

12. Cost of Collection of A.M.A. Dues:

Mr. E. E. Fitzgerald, business manager of the Los Angeles County Medical Association, was introduced and asked that the Council consider some means of compensating the county societies for the cost of collecting the dues of the American Medical Association. Doctor Ivan C. Heron, chairman of the Auditing Committee, and Mr. Hunton were requested to look into any additional procedures required for this purpose.

13. Prepaid Medical Care Costs:

Doctor Dan O. Kilroy reported on a legislative proposal which would provide care through voluntary health insurance plans for people now being cared for through state or federal aid. This proposal has been referred to an interim committee of the State Assembly. On motion duly made and seconded, it was voted to endorse this study and to offer the interim committee the cooperation of the Association.

14. Telephone Answering Services:

On motion duly made and seconded it was voted to cooperate with telephone answering and secretarial services in seeking retention of telephone equipment which provides for connecting the patient with the physician and which may be discontinued by the telephone company.

15. Committee on Insurance:

Councilor Kirchner, chairman of the Committee on Insurance, reported that his committee had studied a proposal which had been made to provide group life insurance for members of the Association. He stated that additional proposals were also being prepared and suggested that professional analysts be retained to evaluate such proposals. It was agreed that his committee should continue its studies and look into the probable expense of such professional services.

16. Committee on Mental Health:

Doctor Hendrie Gartshore, chairman of the Committee on Mental Health, reported on efforts being expended by other organizations to secure passage of legislation to establish community mental health centers. On motion duly made and seconded, it was voted to ask legislative and legal counsel to confer with psychiatrists and others with a view toward producing a positive program to meet the needs for such care.

17. Board of Nurse Examiners:

Doctor Howard Bosworth, chairman of the Advisory Council to the State Board of Nurse Examiners, reported to the Council on the activities of that body and was thanked by the chairman for his services.

18. Committee on Blood Banks:

Mr. Hassard and Doctor John R. Upton, chairman of the Committee on Blood Banks, reported on the current status of blood banking in the Fresno area, where a competitive situation obtains.

Recess:

At this point, 11:30 a.m., the Council was declared in recess until 7:30 a.m., Tuesday, May 1, 1956, in the same place.

19. Annual Sessions:

On motion duly made and seconded, it was voted to plan Annual Sessions to start the last Sunday of each April, except where that Sunday might be Easter, in which case the meeting shall start the Sunday following Easter, and to plan such meetings on a five-year advance period.

20. California Physicians' Service:

Mr. K. L. Hamman reported that California Physicians' Service now has more than 754,000 members and that income has increased 9.58 per cent to more than \$29,000,000 annually. Administrative expenses, he stated, total 11.56 per cent and physician membership is more than 12,900.

Doctor Shipman reported on a meeting with representatives of several labor groups on the question of prepaid health insurance plans.

21. Los Angeles Medical Cavalcade:

Doctor Rosenow reported that the executive committee of the Los Angeles County Medical Association has recommended that medical meetings such as held in that city in January, 1956, be discontinued but that the Cavalcade of Health and Medical Progress, which was open to the public, be repeated under auspices of the C.M.A. On motion duly made and seconded it was voted to refer this matter to the Committee on Public Relations.

22. San Diego Litigation:

Mr. Hassard and Councilor West reported that litigation in San Diego County had been terminated by dismissal of two cases pending against the San Diego County Medical Society. On motion duly made and seconded it was voted to commend the San Diego County Medical Society on its statesman-like handling of this matter.

23. Intravenous Injections:

Mr. Hassard reported on a question of interpretation which has arisen around the language of the

laws governing the giving of intravenous injections by registered nurses. On motion duly made and seconded, it was voted to refer this question to the Committee on Other Professions.

24. *Cancer Commission:*

Doctor Daniels presented a draft of a pamphlet produced by the Cancer Commission on the subject of cancer quackery. On motion duly made and seconded, it was voted to approve publication of this pamphlet and distribution to all Association members.

25. *Committee on Maternal Health:*

Doctor Harrington, chairman of the Committee on Maternal Health, reported on a meeting of interested parties on the subject of maternal and perinatal mortality, at which time the entire group urged that studies should be made in this field. On motion duly made and seconded, it was voted to authorize continued discussions with other members of the original group.

26. *Committee on History and Obituaries:*

Mr. Hunton read a report of the Committee on History and Obituaries, in which authority was asked to discard some obviously useless material and to consolidate the balance into a form which would permit a start to be made on preparation of a history of the Association. On motion duly made and seconded, it was voted to authorize the committee to proceed along these lines and to provide storage space for the usable material in the library of the Los Angeles County Medical Association.

27. *Annual Session Expenses:*

Doctor Daniels reported that additional costs for the production of television features used in the Annual Session had been met by a group of Los Angeles physicians and asked that \$2,000 be appropriated to help meet this cost. On motion duly made and seconded, this expense was authorized as a charge against Annual Session costs.

28. *Woman's Auxiliary:*

On motion duly made and seconded, it was voted to express to the Woman's Auxiliary the thanks of the Association for the Auxiliary's assistance during the past year.

Recess:

At this point, 11:25 a.m., the Council was declared in recess until 7:30 a.m., Wednesday, May 2, 1956, in the same place.

29. *Group Insurance:*

Doctor Kirchner, chairman of the Committee on Insurance, introduced Mr. Little of Coates, Herfurth and England, actuaries, and Dr. Olshen, actuary for West Coast Life Insurance Co., who dis-

cussed a group life insurance contract which had previously been approved by the Trustees of California Physicians' Service. Messrs. Hellgren and Voight of Lumberman's Mutual Casualty Co. were also introduced for a discussion of the present group disability contract for C.M.A. members. On motion duly made and seconded, it was voted to authorize the Executive Committee to consider steps necessary to make the disability contract more effective.

30. *Committee on Postgraduate Activities:*

On motion duly made and seconded, it was voted to authorize the Committee on Postgraduate Activities to present a suitable token of appreciation to Doctor Charles A. Broadbuss for his services as director of the committee's programs.

31. *State College Student Health Services:*

Doctors L. Henry Garland and Charles E. Grayson reported on the proposed establishment of student health services in ten state colleges and suggested that the State Department of Education be urged to assure the best possible medical services in such instances. On motion duly made and seconded, it was voted to refer this matter to the Committee on Government-Financed Medical Care Programs.

32. *Committee on Government-Financed Medical Care Programs:*

Doctor John M. Rumsey, chairman of the Committee on Government-Financed Medical Care Programs, reported the committee's recommendation that the Association support the position of the American Medical Association that the dependents of military personnel be provided with the services of private physicians for their medical care. This was approved.

Doctor Rumsey also recommended that California Physicians' Service be the agent for all physicians in the "home-town" medical care program of the Veterans' Administration. On motion duly made and seconded, this recommendation was approved.

Doctor Rumsey also asked that messages be sent to the California members of Congress on the Association's position on the question of medical care for dependents of military personnel.

On the question of the line of authority of this special committee, it was agreed that the committee be considered a committee of the Commission on Medical Services.

33. *Poliomyelitis Vaccine:*

Doctor John W. Green urged the Council to give further consideration to the liability of physicians who cooperate in programs for administration of poliomyelitis vaccine and it was agreed that further study would be made on this subject.

34. *Audio-Digest Foundation:*

Doctor Lum announced that Audio-Digest Foundation would today make a contribution of \$1,000 to the American Medical Education Foundation.

35. *Appreciation to Outgoing Councilors:*

Chairman Lum, with the unanimous approval of the Council, expressed the deep appreciation of the Council for the valuable contributions of Doctor Sidney J. Shipman, outgoing President, and Doctor Paul Foster, retiring as Vice-Speaker of the House of Delegates.

Adjournment:

There being no further business, the meeting was adjourned at 9:20 a.m.

DONALD D. LUM, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

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419th Meeting

The meeting was called to order by Chairman Lum in the Frenchette Room of the Ambassador Hotel at 5:30 p.m., Wednesday, May 2, 1956.

Roll Call:

Present were President Charnock, President-Elect MacDonald, Speaker Doyle, Vice-Speaker O'Neill, Secretary Daniels, Editor Wilbur and Councilors West, Wheeler, Loos, Wadsworth, Pearman, Harrington, McPharlin, Sherman, Lum, Kirchner, Carey, Heron and Rosenow.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Clancy, Thomas and Gillette of C.M.A. staff; legal counsel Hassard; Mr. K. L. Hamman of California Physicians' Service and Mr. Rollen Waterson.

1. *Election of Officers:*

(a) On nomination duly made and seconded, Doctor Lum was unanimously elected Chairman.

(b) On nomination duly made and seconded, Doctor Heron was unanimously elected Vice-Chairman.

2. *Members of Auditing Committee:*

On motion duly made and seconded, the Council approved the chairman's nomination of Doctor Heron as Chairman and Doctors Reynolds and Sherman as members of the Auditing Committee.

3. *Appointments:*

On motion duly made and seconded in each instance, the following appointments were approved:

Secretary-Treasurer, Albert C. Daniels.

Editor, Dwight L. Wilbur.

Legal Counsel, Peart, Baraty & Hassard.

Executive Secretary, Mr. John Hunton.

4. *Council Members of C.P.S. Trustees:*

On motion duly made and seconded, the chairman's nominations for members of the Board of Trustees of California Physicians' Service, to represent the Council, were approved. These were Doctors Heron, Reynolds and Wadsworth.

5. *Crippled Children's Services:*

Councilor West presented a proposed draft of a letter to be sent to the chairman of the Committee on Other Professions on the subject of participation by other professions in the Crippled Children's Services.

On motion duly made and seconded, it was voted to refer this matter to the Committee on Other Professions.

6. *Invitations to Council Meetings:*

On motion duly made and seconded, it was voted to extend invitations to the deans of the medical schools to attend meetings of the Council held in their areas and, if necessary, to meet their travel expenses.

7. *Committee on Public Relations:*

On motion duly made and seconded, the Council accepted the resignation of Doctor Lum as chairman of the Committee on Public Relations and named Doctor Sidney J. Shipman to succeed to this post.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 7:00 p.m.

DONALD D. LUM, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

Executive Committee Minutes

Tentative Draft: Minutes of the 258th and 259th Meeting of the Executive Committee, Ambassador Hotel, Los Angeles, May 2, 1956.

258th Meeting

The meeting was called to order by Chairman Heron in the Frenchette Room of the Ambassador Hotel, Los Angeles at 7:30 p.m., Wednesday, May 2, 1956.

Roll Call:

Present were President Charnock, President-Elect MacDonald, Council Chairman Lum, Speaker Doyle and Auditing Committee Chairman Heron; Secretary Daniels and Editor Wilbur.

A quorum present and acting.

Present by invitation were executive secretary Hunton and legal counsel Hassard.

1. Election of Chairman:

On nomination duly made and seconded, Doctor Ivan C. Heron was unanimously elected Chairman.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 7:35 p.m.

IVAN C. HERON, M.D., *Chairman*

ALBERT C. DANIELS, M.D., *Secretary*

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259th Meeting

The meeting was called to order by Chairman Heron in Room 214 of the Sir Francis Drake Hotel, San Francisco, on Saturday, May 26, 1956, at 9:30 a.m.

Roll Call:

Present were President Charnock, President-Elect MacDonald, Council Chairman Lum, Speaker Doyle, Auditing Committee Chairman Heron, Secretary Daniels and Editor Wilbur.

A quorum present and acting.

Present by invitation were Messrs. Hunton and Clancy of C.M.A. staff, legal counsel Hassard, Doctors Arthur A. Kirchner and T. Eric Reynolds, Messrs. Hellgren and Berry of Lumberman's Mutual Casualty Co., and Messrs. Charles O. Finley and Calvin Smith of Charles O. Finley Co., administrator of the C.M.A. disability insurance program.

1. 1956 House of Delegates Resolution:

Discussion was held on the appointment of a committee to carry out the study called for in Resolution No. 6 adopted by the 1956 House of Delegates. On motion duly made and seconded, it was voted to ask the Council Chairman to appoint Doctor Dwight L. Wilbur chairman of this committee, the other members to be selected later.

2. Voluntary Health Insurance:

Discussion was held on possible means of cooperating with voluntary health insurance underwriters in eliminating the small percentage of professional fees which are patently greater than average charges and are superimposed on insurance coverages provided policyholders. It was agreed that this matter be discussed further before the Council.

3. Central California Blood Bank:

On motion duly made and seconded, it was voted to extend an additional loan of \$6,000 to Central California Blood Bank, conditioned on the Bank delivering to C.M.A. mortgages on its real and personal properties to secure all loans to date.

4. Disability Insurance:

Doctor Kirchner, chairman of the Committee on Insurance, requested discussion by Messrs. Hell-

gren, Berry and Finley of the need for amending the disability insurance coverage now provided for Association members. It was brought out that a small number of claimants are causing serious losses to the fund and that changes from the present coverage must be effected if the program is to continue. It was agreed that the representatives of Lumberman's Mutual Casualty Co. and Charles O. Finley Co. would prepare alternate proposals for later consideration.

5. Membership:

(a) On motion duly made and seconded, 1,091 delinquent members whose dues had been received since May 2, 1956, were voted reinstatement.

(b) On motion duly made and seconded in each instance, Doctors Harry V. Baker of Napa County and Francis H. Redewill, Sr., of San Francisco were voted Retired Membership.

(c) On motion duly made and seconded in each instance, 16 applicants were voted Associate Membership. These were: Jacquelin Perry, Los Angeles County; Catherine C. Pike, Marin County; Mary N. Tiffany, Orange County; Stuart A. Cameron, Francis L. Crowley, O. L. Gericke, Irving D. Johnson, Thomas F. Judefind, Robert J. Lentz, Maxwell H. Shack, San Bernardino County; Herbert Anderson, Theodore Bartelmes, T. Timothy Crocker, Herbert L. Abrams, San Francisco County; Thomas E. Patton, Santa Barbara County; Richard W. Finner, Stanislaus County.

(d) On motion duly made and seconded in each instance, eight applicants were voted reduction of dues because of prolonged illness or postgraduate study.

6. Commission on Medical Services:

On motion duly made and seconded, it was voted to accept the recommendation of the Commission on Medical Services that the mailing list be made available to an organization of insurance underwriters for the distribution of educational material on voluntary health insurance.

7. Public Relations:

Mr. Clancy reported that a new publication was under consideration by the Committee on Public Relations as a means of keeping the membership advised of current events and that a later report would be made after consideration of this proposal by the committee.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 3:45 p.m.

IVAN C. HERON, M.D., *Chairman*

ALBERT C. DANIELS, M.D., *Secretary*

In Memoriam

BERKE, SAMUEL DAVID. Died in Los Angeles, June 5, 1956, aged 52. Graduate of Dalousie University Faculty of Medicine, Halifax, Nova Scotia, Canada, 1926. Licensed in California in 1927. Doctor Berke was a member of the Riverside County Medical Association.



GLOVER, MARY E. Died in San Francisco, May 20, 1956 of injuries received in a fall caused by cerebral hemorrhage, aged 75. Graduate of Hahnemann Medical College of the Pacific, San Francisco, 1905. Licensed in California in 1906. Doctor Glover was a member of the San Francisco Medical Society.



HAWORTH, MORRIS W. Died in Sacramento, May 3, 1956, aged 80. Graduate of Barnes Medical College, St. Louis, Missouri, 1901. Licensed in California in 1901. Doctor Haworth was a retired member of the Sacramento Society for Medical Improvement, the California Medical Association, and an associate member of the American Medical Association.



JENKINS, BERTHA ELIZABETH. Died in Oakland, May 22, 1956 of acute coronary occlusion, aged 70. Graduate of the Oakland College of Medicine and Surgery, Oakland, California, 1919. Licensed in California in 1919. Doctor Jenkins was a retired member of the Alameda-Contra Costa Medical Association, the California Medical Association, and an associate member of the American Medical Association.



LYNCH, WILLIAM J. Died in Weimar, May 21, 1956, of heart disease, aged 58. Graduate of the National University of Ireland, University College, Cork, 1919. Licensed in California in 1928. Doctor Lynch was a member of the Placer-Nevada-Sierra County Medical Society.



MCDOWELL, CHARLES ALBERT. Died in Covina, May 14, 1956, of coronary occlusion, aged 56. Graduate of the University of Pittsburgh School of Medicine, Pennsylvania, 1925. Licensed in California in 1928. Doctor McDowell was a member of the Los Angeles County Medical Association.



MITCHELL, WILLIAM EARL. Died in Berkeley, May 22, 1956, of arteriosclerotic heart disease, aged 66. Graduate of the University of Colorado School of Medicine, Denver, 1913. Licensed in California in 1913. Doctor Mitchell was a retired member of the Alameda-Contra Costa Medical Association, the California Medical Association, and an associate member of the American Medical Association.



MONTEVERDE, WHITTEN C. Died May 23, 1956 in Antioch, of thrombotic occlusion of the right main coronary artery, aged 53. Graduate of the St. Louis University of Medicine, Missouri, 1929. Licensed in California in 1930. Doctor Monteverde was a member of the Alameda-Contra Costa Medical Association.



MOORE, JAMES ROSS. Died in Los Angeles, February 3, 1956, of heart disease, aged 82. Graduate of Western Reserve University School of Medicine, Cleveland, Ohio, 1900.

Licensed in California in 1903. Doctor Moore was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.



OWENS, RAYMOND L. Died in Livermore, June 4, 1956, aged 60. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1925. Licensed in California in 1925. Doctor Owens was a member of the Alameda-Contra Costa Medical Association.



PAXTON, GEORGE A. Died in Marysville, January 8, 1956. Graduate of the University of Southern California School of Medicine, 1945. Licensed in California in 1945. Doctor Paxton was a member of the Yuba-Sutter-Colusa County Medical Society.



PEDDICORD, HARPER. Died in Redwood City, May 7, 1956, of coronary thrombosis, aged 81. Graduate of the Atlantic Medical College, Baltimore, Maryland, 1899. Licensed in California in 1914. Doctor Peddicord was a member of the San Mateo County Medical Society, a life member of the California Medical Association, and a member of the American Medical Association.



PETRITZ, LOUIS J. Died in Los Angeles, May 17, 1956, of carcinoma of the stomach, aged 62. Graduate of Northwestern University Medical School, Chicago, Illinois, 1918. Licensed in California in 1931. Doctor Petritz was a member of the Los Angeles County Medical Association.



PRINCE, CHARLES C. Died in Long Beach, April 28, 1956, of a cerebrovascular accident, aged 51. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1930. Licensed in California in 1930. Doctor Prince was a retired member of the Los Angeles County Medical Association, the California Medical Association, and an associate member of the American Medical Association.



SMALL, HAROLD E. Died in Santa Ana, May 17, 1956, of heart disease, aged 69. Graduate of the University of Vermont College of Medicine, Burlington, 1915. Licensed in California in 1952. Doctor Small was a member of the Orange County Medical Association.



VAN METER, JULIUS N. Died in Monrovia, May 25, 1956, of heart disease, aged 69. Graduate of Drake University College of Medicine, Des Moines, Iowa, 1913. Licensed in California in 1919. Doctor Van Meter was a retired member of the Los Angeles County Medical Association, the California Medical Association, and an associate member of the American Medical Association.



VIXIE, LOREN O. Died in East Los Angeles, May 5, 1956, of rheumatic heart disease, aged 38. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1944. Licensed in California in 1944. Doctor Vixie was a member of the Los Angeles County Medical Association.



WOMAN'S AUXILIARY

TO THE CALIFORNIA MEDICAL ASSOCIATION

What Do You Know About Your Auxiliary?

I WONDER how typical is the answer we received from one doctor to the above question when he replied, "Well, I know the girls meet once a month for luncheon and that they have a good time." That statement is true as far as it goes. Most of our county auxiliaries do meet once a month and nearly always for luncheon, and we do have a good time, but the answer falls far short of telling the complete story. We hope through this page, so generously given to us by the California Medical Association, to tell our whole story this year and we hope that you, the readers will read that story and come to know us well.

The Woman's Auxiliary to the California Medical Association is organized for two purposes: First, to aid you, the doctors of medicine, in any way we may, and second, to act as liaison between organized scientific medicine and the people in our communities in order that they may better understand the problems of medicine and what our Medical Association is doing to solve them.

In the first instance we are active in behalf of medicine by being informed on legislation and taking a very active part, when called upon to do so, by alerting our legislators by wires and letters to the official stand of the Medical Association on individual pieces of legislation. This is accomplished through our state chairman of legislation, who in turn contacts her individual county legislative chairmen, who then become active at the grass-roots level.

The Auxiliary is very zealous in behalf of the American Medical Educational Foundation, which is a service to our private medical schools to keep government from subsidizing them and thus dictating medical practices. California Auxiliary donated more than \$7,000 this past year to A.M.E.F. Some of this money was a voluntary per capita assessment of \$1 per member, and some was raised by special benefit events in its behalf.

Nurse recruitment, another of our major projects, is directed at relieving the society of the shortage of

trained nurses. Some of our county auxiliaries provide endowment funds to help needy girls through training, while others stress the Future Nurses' Clubs in the junior and senior high schools to attract girls to nursing as a career at the time they are planning their vocational future.

Medical Benevolence occupies an important place in the Auxiliary program, raising funds for the care and comfort of our medical associates who find themselves in need of help.

All of these activities will be given separate attention on this page during the year and we hope you will follow our story closely.

The second part of our effort is pertinent to our relationship with the general public. Our members nearly all belong to other clubs and organizations in their communities and are ever alert to areas where there seems to be misinformation concerning medical matters or misunderstanding of organized medicine in public affairs. Most of our county auxiliaries have annual public relations meetings to which representatives of other clubs in their communities are invited. At these meetings a speaker is usually presented on some phase of medicine, which is helpful in clearing the thinking of many leaders and in establishing a warm friendly feeling among the many and diversified groups. Friendliness is a watchword of the Auxiliary, both within its own organization and toward other organizations. Thus in a quiet, steady way a constant program fostering good public relations is being enacted by members of your Auxiliary.

Your county auxiliary stands ready and eager to give your Association all the help possible in any of its projects for which busy physicians have so little time. Yes, we meet and have luncheon and have a very good time, and it is to be hoped we will always continue to do so because from that happy contact with each other comes the will to work together in behalf of our cause, American medicine.

MRS. PAUL C. BLAISDELL, *President*

NEWS & NOTES

NATIONAL • STATE • COUNTY

LOS ANGELES

At the annual meeting of the **Radiological Society of Southern California**, held in May, the following officers were elected for the year 1956-57: Chairman, Dr. John Camp, Los Angeles; vice-chairman, Dr. Donald R. Laing, Pasadena; secretary-treasurer, Dr. Robert B. Engle, Pasadena. Other members of the board of directors are: Dr. George Jacobson of Los Angeles, and Dr. James B. Irwin of San Diego.

* * *

An award of \$20,000 to support **cancer research** for three years was made recently by the National Institutes of Health to two associate professors of pharmacology at the College of Medical Evangelists. They are Drs. Mervyn Hardinge and Lester Lonergan and the subject of the study is the carcinogens of pulmonary tumors.

* * *

Dr. Howard W. Bosworth of Los Angeles was named president of the National Tuberculosis Association at the recent annual meeting of the organization in New York. Dr. Bosworth has been at one time or another president of the Tuberculosis and Health Associations of Los Angeles County and of California. He also has served as president of the American, the California and the Los Angeles County Trudeau societies.

NAPA

More than 250 townspeople, friends and patients, honored **Dr. Dwight H. Murray** June 23 with a testimonial dinner in Napa. Sponsored by the Napa Valley Chamber of Commerce, the occasion was the climax of "Dr. Murray Homecoming Day," and followed his inauguration in Chicago as president of the American Medical Association.

Following tributes by Dr. Sidney J. Shipman and Dr. Donald A. Charnock, Dr. Murray discussed "human interest sidelights" on the recent A.M.A. convention.

Main speaker of the evening was Ben Corlett, former Napa banker and now an executive vice-president of the American Trust Company. Mr. Corlett concluded his speech with this tribute to Dr. Murray:

"Country doctor in the finest tradition . . . skilled in the practice of his chosen profession . . . outstanding example of good citizenship . . . lover of hard but fair play . . . outspoken advocate of the type of Americanism that built the nation . . . aggressive exponent of free institutions in a free country . . . pleader for a more sympathetic understanding of human as well as physical problems . . . good counselor . . . good neighbor . . . good friend."

* * *

Physicians from Marin, Solano and Napa counties held their annual Four-county Medical Society **golf tournament** and dinner meeting, June 14. The golf tournament was held at the new Silverado Country Club. Dinner was at the Napa Valley Country Club where Dr. Edward Kupka, chief of the Bureau of Tuberculosis Control for the State Department of Public Health, discussed "An American Doctor's Iliad in Indochina."



SAN DIEGO

Miss Evelyn La Heist, 16, of San Diego won one of the two top American Medical Association awards at the National Science Fair in Oklahoma City, May 10-12. She appeared at the fair as a finalist from the second annual Greater San Diego Science Fair conducted by the San Diego Union.

Her award consists of an A.M.A. citation signed by Dr. Elmer Hess, president, and Dr. Gunnar Gundersen, chairman of the board of trustees, commending her for her outstanding exhibit, "Malaria," in the field of basic medical sciences. In addition, she was the guest of the A.M.A. at the annual meeting in Chicago, June 11-15, where she exhibited her display in the scientific exhibits on Navy Pier.

SAN FRANCISCO

At graduation ceremonies for the senior class of the University of California School of Medicine, **Dennis Paul Horan** was awarded the gold headed cane which each year is given to the student whose classmates select as the member who "best represents the true physician." Runners-up for the award were **Donald Frank Tierney** and **Eric Roberts**.

* * *

Dr. Albert Davis, clinical professor of plastic surgery at Stanford University School of Medicine, was named president of the American Association of Plastic Surgeons at a recent meeting in Toronto, Canada.

GENERAL

An official centennial **tour of the Soviet Union and Europe** has been announced by the California Medical Association with departure from San Francisco and Los Angeles scheduled for October 2 and return on November 1 via Trans World Airlines.

To date, 39 C.M.A. members including wives have contracted for the tour, according to TWA, which has set July 31 as the deadline for applications in compliance with Russian visa requirements.

Combining business and pleasure, the tour will feature a four-day stay-over in Paris enroute to Helsinki, Leningrad and Moscow, where meetings will be held with Russian physicians and other scientists. The group will return via Vienna, Rome, Madrid and Lisbon.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education assemblies and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Recent Advances in Surgery. July 16 to 18. Nineteen and one-half hours. Fee: \$50.00 for three days, \$20.00 per day.

Surgery of Trauma. July 19 and 20. Twelve hours. Fee: \$35.00.

Recent Advances in Medicine. July 23 to 27. Thirty-five hours. Fee: \$75.00 for full week or \$20.00 per day.

Anesthesia Seminar. August 27 to 29. Eighteen hours. Fee: \$50.00.

Fundamental Principles of Radioactivity Including Clinical Use of Radioisotopes. Wednesdays, September 19, 1956 through July 3, 1957. One hundred eighty hours. Fee: \$700.00.

Photography in Medical Practice and Research. Thursdays, September 20 through December 13. Twenty-four hours. Fee: \$35.00.

Aviation Medicine. October 24, 25, 26. Twenty-three hours. Fee to be announced.

Surgical Anatomy. September 24 to November 26. Fee: \$75.00.

Pathological Physiology of the Cardiovascular System. Begins October 1. Hours and fee to be announced.

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Ophthalmological Conference on Glaucoma. September 27, 28, 29. Fifteen hours. Fee: \$60.00.

Symposium on Trauma, Franklin Hospital, September 29 and 30. Twelve hours. Fee: \$40.00.

Medicine for General Practitioners. East Oakland Hospital, Tuesday Evenings, September 10 to December 3. Twenty-four hours. Fee: \$50.00.

Psychological Aspects of Medical Practice. Wednesday Evenings, October 3 to December 12. Twenty hours.*

Recent Advances in Laboratory and Clinical Medicine for Medical Technicians. Tuesday Evenings, October 16 to November 13. Nine hours.*

Annual Ophthalmology Conference. December 5, 6, 7. Twenty hours.*

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: \$250.00 per month.

* Fees to be announced.

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MOntrrose 4-3600, Ext. 665.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Diagnosis and Management of Cardiovascular Diseases. July 20, 21 and 22, Hotel Statler and Good Hope Clinic, twenty-four hours. Fee: \$65.00. Registration closes July 10, 1956.

Home Course in Electrocardiography. Begins July 13. Fifty-two weeks. Fee: \$100.00.

Intensive Review of Internal Medicine. Monday through Friday, 8:30 a.m. to 12:30 p.m. September 24 to October 5. Forty hours. Fee: \$65.00.

Bedside Clinics and Panel Discussions on Therapy in Internal Medicine. Los Angeles County Hospital, Thursdays, 7:30 to 9:30 p.m. Twenty-four hours. Fee: \$65.00.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: \$30.00. (Each session all-inclusive.)

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Anesthesiology. Daily, full-time, six months, beginning each six months. Fee: \$300.

Surgical Anatomy, Dissection, Demonstration and Lectures. Monday and Wednesday, October 1, 1956 to June 5, 1957. 264 hours.

Surgical Anatomy, Dissection, Demonstration and Lectures on Upper and Lower Extremities. Monday and Wednesday, October 1, 1956 to January 9, 1957. 104 hours.

Surgical Anatomy, Dissection, Demonstration and Lectures. Wednesdays, October 3, 1956 to June 5, 1957. Seventy-four hours.

Surgical Anatomy, Demonstration and Lectures of Upper and Lower Extremities. Wednesdays, October 3, 1956 to January 9, 1957. Twenty-six hours.

General Urology. Mondays, October 1, 1956 to December 17, 1956. Twenty-four hours.

General and Surgical Pathology. Tuesday and Thursday, October 2, 1956 to June 4, 1957. 194 hours.

Traumatic and Minor Orthopedic Surgery. Tuesday and Thursday, October 2, 1956 to January 10, 1957. Thirty seven and one-half hours.

Roentgen Diagnosis and Therapy. Wednesday, October 3, 1956 to June 5, 1957. Thirty-three hours.

Surgical Physiology. Thursday, October 4, 1956 to June 6, 1957. Sixty-four hours.

Contact: Chairman, Section on Graduate and Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. Angelus 9-9131, Ext. 205.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE CIRCUIT COURSE

SACRAMENTO VALLEY CIRCUIT, in association with Stanford University School of Medicine:
Dunsmuir—Monday, October 21, 28, November 4, 11.

Chico—Tuesdays, October 22, 29, November 5, 12.
Marysville—Wednesday, October 23, 30, November 6, 13.
Auburn—Thursdays, October 24, 31, November 7, 14.

Contact: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill St., Los Angeles 13.

Medical Dates Bulletin

AUGUST MEETINGS

NEVADA STATE MEDICAL ASSOCIATION annual meeting in conjunction with Reno Surgical Society, Riverside Hotel, Reno, Nevada, August 22 to 25. Contact: Lowell Peterson, M.D., chairman, Arrangements and Program Committee, 130 North Virginia St., Reno, Nevada.

SEPTEMBER MEETINGS

COLORADO STATE MEDICAL SOCIETY Annual Session, Estes Park, Colorado, September 5 to 8. Contact: Charley J. Smyth, M.D., chairman, Scientific Program Committee, 835 Republic Bldg., Denver 2, Colorado.

UTAH STATE MEDICAL ASSOCIATION Annual Scientific Meeting, Hotel Utah, Salt Lake City, September 6 to 8. Contact: Mr. Harold Bowman, executive secretary, 42 S. Fifth Street E., Salt Lake City 2, Utah.

ST. JOHN'S HOSPITAL Postgraduate Assembly, September 10, 11, 12, 9 a.m. to 4 p.m. and 8 to 9 p.m. Elks Club, Santa Monica. Contact: John C. Egan, M.D., Director, 1245 Glendon Ave., Los Angeles 24.

STOCKTON POSTGRADUATE STUDY CLUB, Thursday evenings, September 13 to November 15, Stockton State Hospital. Contact: A. Merchant, M.D., Medical-Dental Bldg., Stockton.

SANTA BARBARA COUNTY HEART ASSOCIATION in cooperation with University of Southern California Postgraduate Division. September 15, 9 a.m. to 5 p.m., Santa Maria Inn, Santa Maria. Contact: Katherine McCloskey, executive director, Santa Barbara County Heart Association, 18 La Arcada Court, Santa Barbara.

WASHINGTON STATE MEDICAL ASSOCIATION Annual Meeting, Olympic Hotel, Seattle, September 16-19. Contact: Mr. Ralph W. Neill, executive secretary, 1309 Seventh Ave., Seattle, Washington.

SAN DIEGO COUNTY GENERAL HOSPITAL TENTH ANNUAL POSTGRADUATE ASSEMBLY, September 19-20. Contact: Howard B. Kirtland, Sr., M.D., Chairman Postgraduate Committee, 3505 Fourth Avenue, San Diego 3.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE ANNUAL MEETING, September 29, La Playa Hotel, Carmel. Contact: Mrs. Mildred B. Coleman, Assistant Secretary, Room 515, 384 Post Street, San Francisco 8.

OCTOBER MEETINGS

SAN FRANCISCO HEART ASSOCIATION Annual Postgraduate Symposium, October 3, 4, 5, 1956, St. Francis Hotel, San Francisco. Contact: Executive director, 604 Mission St., San Francisco.

ALAMEDA-CONTRA COSTA DIABETES ASSOCIATION one-day Symposium on Oral "Insulinoids," October 3, Highland-Alameda County Hospital, Oakland. Contact: Institute for Metabolic Research, Highland-Alameda County Hospital, Oakland.

AMERICAN CANCER SOCIETY, California Division, Annual Cancer Conference, October 4, 2 to 5 p.m., Fairmont

Hotel, San Francisco. Contact: Otto Pflueger, M.D., Conference chairman, 384 Post St., San Francisco.

HERRICK MEMORIAL HOSPITAL Medical Staff Second Annual Postgraduate Symposium, 9 a.m.-5 p.m., October 5, Berkeley High School Little Theatre, Allston Way between Grove and Milvia, Berkeley, Calif. Contact: Administrator's Office, Herrick Hospital, Berkeley, or telephone: THornwall 5-0130.

AMERICAN COLLEGE OF SURGEONS Clinical Congress, San Francisco, October 8 to 12. Contact: American College of Surgeons Office, 40 E. Erie St., Chicago, Ill.

SAN DIEGO COUNTY HEART ASSOCIATION Professional Symposium, U. S. Naval Hospital Auditorium, Balboa Park, San Diego, October 9. Contact: O. Martin Avison, executive director, San Diego County Heart Association, 1651 Fourth St., San Diego 1.

LOS ANGELES COUNTY HEART ASSOCIATION 26th Annual Symposium on Heart Disease, Wilshire-Ebell Theatre, 4401 West 8th St., Los Angeles, October 10 and 11. Contact: Robert A. Pike, executive director, Los Angeles County Heart Association, 316 South Bonnie Brae, Los Angeles 57 or telephone DUNKirk 8-4127.

CALIFORNIA ACADEMY OF GENERAL PRACTICE 8th Annual Scientific Assembly, Hotel Statler, Los Angeles, October 14, 15, 16, 17. Contact: William W. Rogers, executive secretary, California Academy of General Practice, 461 Market St., San Francisco.

ORTHOPAEDIC HOSPITAL and RANCHO LOS AMIGOS RESPIRATORY CENTER jointly sponsor "A Seminar in Comprehensive Patient Care for Selected Neuromuscular Disabilities," October 22 to 26. All-day sessions beginning at 9:00 a.m. and one evening session, October 24. Contact: C. L. Lowman, M.D., Orthopaedic Hospital, 2400 S. Flower St., Los Angeles, or John Affeldt, M.D., Rancho Los Amigos, Hondo, Calif.

NOVEMBER MEETINGS

LOS ANGELES UROLOGICAL ASSOCIATION Postgraduate Assembly, Ambassador Hotel, Los Angeles, November 12 to 16. Contact: Miss Vesta Fitzsimmons, executive secretary, 6253 Hollywood Blvd., Los Angeles 28.

VETERANS ADMINISTRATION HOSPITAL Conference on Pulmonary Diseases, each Thursday. Contact: William R. Haas, M.D., director, Professional Services, Veterans Administration Hospital, Oakland, Calif.

SONOMA COUNTY HEART ASSOCIATION Cardiovascular Symposium presented in cooperation with University of California Medical Extension, Odd Fellows Hall, Santa Rosa, November 15. Contact: Thomas M. Torgerson, M.D., president Sonoma County Heart Association, P. O. Box 844, Santa Rosa, Calif.

1957 MEETINGS

SOCIETY OF GRADUATE SURGEONS OF LOS ANGELES COUNTY Surgical Forum, March 4 to 8, Ambassador Hotel, Los Angeles. Contact: Wm. F. Roe, M.D., 14431 Hamlin St., Van Nuys, Calif.

REGIONAL MEETING INTERNATIONAL COLLEGE OF SURGEONS, Santa Barbara, California, April 1 to 2. Contact: Ross V. Parks, M.D., 1930 Wilshire Blvd., Los Angeles 57.

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles, April 28 to May 1. Contact: John Hunton, executive secretary, 450 Sutter St., San Francisco 8, or Ed Clancy, director of Public Relations, 417 S. Hill St., Los Angeles 13.

INFORMATION

"Disability Freeze" Provision of Social Security Law

IN RECENT MONTHS many physicians have heard from patients about the disability freeze provision in the social security law. This provision, added to the old-age and survivors' insurance program in 1954, permits people who have prolonged total disability to apply to have their social security records frozen for the period of their disability. Thus, the time when they could not work and so had no earnings credit to their social security accounts does not count against them in determining their rights to benefits, nor the amount of benefits which will be payable to them at age 65, or to their families in case they should die.

Before a worker's social security record can be frozen, he has to meet certain work requirements. His social security record up to the time of his disability must show that he was in fact a worker, with a fairly regular and recent work history. In addition, he must be shown to have a medically determinable physical or mental impairment severe enough to keep him from engaging in any substantial gainful activity—one which has existed for more than six months and is expected to last indefinitely or end in his death.

The medical evidence needed to establish the nature and severity of the applicant's disability, the date it began, and its prognosis comes from the doctor who has treated the worker and knows his case, or the hospital or institution in which the worker has been confined. A medical report form was designed to assist the physician in furnishing the needed medical evidence and to indicate the nature and extent of clinical detail which would be necessary. It is given to the applicant for the "disability freeze" and he is asked to have it filled out by the physician most familiar with his impairment. The form itself is modeled closely after the medical report used by major life insurance companies in their disability claims work.

If you have received this medical form to fill out for any of your patients, you are probably aware that the law makes the disabled worker responsible for seeing that medical evidence is submitted for him and for paying any costs involved. The law does not permit the government to pay any costs in connection with securing the medical evidence needed for a determination of disability. You may

also know that to insure the confidentiality of the medical evidence, the medical report form is not to be returned to the patient, but is to be mailed by the physician direct to the local social security office. This office, incidentally, is ready to furnish additional information to the physician concerning the medical report form and the operating of the disability freeze.

Determinations as to disability based on the evidence submitted are made under an agreement with the federal government, by professional members of an agency of the state in which the applicant resides. In most states, this is the vocational rehabilitation agency. Since referral of disabled individuals for any rehabilitative services which might return them to gainful work is an important aspect of the program, each person applying for the social security disability freeze is told about the availability of vocational rehabilitation services.

On the professional team in the state agency at least one member is a doctor of medicine. The team reviews and evaluates all medical evidence assembled in the applicant's file, as well as such non-medical factors as age, education and occupational experience. Certain medical guides and standards, worked out with the advice of the Medical Advisory Committee, are used in the consideration of the medical evidence. But, although these guides and standards can be applied in most cases, they are not rigid and arbitrary. The final determination in each case is based on all the available facts on the individual's impairment and vocational history, and, there is consultation among physicians in any borderline situation.

No matter how good the standards, or how considered the judgment of the reviewing team, the determination reached can be no sounder than the evidence upon which it is based. To make sure that he is providing sufficient medical evidence for a prompt and fair determination, the doctor will want to consider the following guides in filling out medical report forms for those of his patients who have applied for the social security disability freeze:

First, include sufficient clinical detail to enable the reviewing team to make a sound determination as to the severity and extent of the patient's current condition.

Second, give enough of the clinical history to provide information as to when the disability began, and when it became so severe as to keep the patient from working.

Third, describe the probable course of the condition from now on, so that a decision can be reached as to whether the impairment is likely to continue indefinitely, or end in death, or whether it is self-limiting, or remediable in the foreseeable future.



THE PHYSICIAN'S *Bookshelf*

INTEGRATED GYNECOLOGY—Principles and Practice—I. C. Rubin M.D. and Joseph Novak, M.D., The Blakiston Division, McGraw-Hill Book Company, Inc., New York, 1956. Three volumes, \$60.00.

In their preface the authors refer to these three volumes of gynecological fact and fancy as a textbook, and say "the book" was designed for use by medical students and general practitioners. One wonders how many students can afford sixty dollars for a gynecologic text (even in six easy monthly payments, as the publisher suggests), and there may be some question about the desirability of presenting such detailed material in the undergraduate years. While the general practitioner may have less trouble meeting the initial cost, it seems unlikely that he would have either the time or the inclination to wade through very many of the eighteen hundred pages in these volumes. The set will be of interest chiefly to specialists in gynecology, particularly those who, for various reasons, may value the personal experiences and points of view of the authors. Rubin, of course, is well known to American gynecologists through his many contributions in the field of infertility. His collaborator, Novak, is from Vienna and should not be confused with the gynecologic sage of the same name from Baltimore.

The first volume deals with more or less standard material on anatomy, congenital anomalies, injuries, displacements and inflammations of the female genitalia. The second volume is majorly a pathology text devoted to tumors of the female sex organs, although it contains also two shorter sections concerned with constitutional pathology and with selected reproductive disorders (particularly sterility). In volume three one discovers what appears to be the basis for the title of the entire work, to wit, a section of some 360 pages on the relationship between reproductive and other body systems. Scarcely anything has been overlooked, from the pineal gland down to the bladder, but much of the material relates to obstetrical situations and much of it just straightforward descriptive detail from the realms of pathology, internal medicine, surgery (and the surgical specialties), without any noticeable "integration." The rest of volume three is given over to a short section on gynecologic symptoms, a long and profusely illustrated section on operative procedures, a bit about physiotherapy, and a few strange odds and ends called "female hygiene." In this latter chapter one learns that bicycling is not advisable for ladies, and horseback riding in a man's saddle is frowned upon to some extent.

Each section of the work has a lengthy bibliography nicely subdivided according to chapter headings, including many of the older references which will be helpful to anyone pursuing the historic aspects of various gynecologic subjects, and the authors have been thoughtful enough to include the full titles of the articles. These volumes are easy to read owing to the rather large type and the liberal use of bold-face headings. The numerous original drawings by

William Dietz are excellent, and the illustrations borrowed from other sources are for the most part clearly reproduced.

Your reviewer feels that this work will be useful for perhaps a decade as an adjunctive reference in gynecologic teaching, but that rather shortly it will slip into the oblivion shared by several similar publications which never appeared in revised editions. In brief, one may say this is a monumental but not an outstanding literary effort.

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TUBERCULOSIS —IN THE ARMY OF THE UNITED STATES IN WORLD WAR II—An Epidemiological Study With An Evaluation of X-ray Screening—Esmond R. Long, M.D., Director, The Henry Phipps Institute, University of Pennsylvania, Seymour Jablon, A.M., Statistician, Follow-up Agency, Division of Medical Sciences, National Research Council, Washington, D. C. V. A. Medical Monograph, Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C., 88 pages, \$1.50.

This monograph deals with the extensive program of mass roentgenographic screening employed by the United States Army during World War II and the apparent results of that program. Opening chapters deal with methods of interpretation of x-ray films (single, double and otherwise), the variability of results obtained in such interpretations and the variability in quality of work done in induction stations. There are then chapters on the results of mass surveys in separation stations, a series of tables on the prevalence of tuberculosis in the Army and finally, a section on aspects of military service in relation to the development of tuberculosis.

The author has confirmed the extensive studies of Yerushalmy, Chamberlain, Garland and others on the need for dual interpretation of roentgenograms. If such interpretation had been employed throughout this entire program the number of "positive" roentgenograms discovered would have been increased about one-third. Of some interest is the finding that at the induction stations classified as "fair" or "poor" in quality, more cases were read as "positive" than in the induction stations classified as "good."

In the summary, the author notes that approximately half of the men discharged for tuberculosis had the disease in roentgenographically detectable form at the time of acceptance for service. Their lesions were overlooked in the induction examination for reasons not always evident in the films themselves. The author believes that tuberculin tests would have been of great value in understanding sources and causes of clinical disease, had it been possible to carry them out as a part of the induction procedure. In connection with the known variations in interpretation of roentgenograms he points out that his studies have shown that disagreement was greater with standard size 14 x 17 films than with minifilms. Again, this confirms the work of the authors first mentioned.

It would have increased the value of the monograph if the author had indicated his criteria for the final diagnosis of

activity. Normally this depends on the detection of tubercle bacilli in the sputum or gastric smear, or by culture, and variations in the reliability of detecting such bacteria are well known. It is to be hoped that future monographs of this type will establish more clearly the basis upon which the final diagnosis of activity of pulmonary tuberculosis is made.

The monograph represents an enormous amount of work and should be of interest to all students of epidemiology and tuberculosis.

* * *

THE POSTURAL COMPLEX—Observations as to Cause, Diagnosis and Treatment—Laurence Jones, B.S., M.D., Chief Orthopedist, Menorah Hospital, 1932-1943, Kansas City, Missouri; Visiting Orthopedist, Cedars of Lebanon Hospital, 1944-1953; Midway Hospital, 1948-1954, Los Angeles. Charles C. Thomas, Publisher, Springfield, Illinois, 1955. 156 pages, \$9.75.

Dr. Laurence Jones, the author of this book, has spent a good deal of time, written extensively and attempted to explain in a scientific and logical fashion the alterations and mechanics that produce pain in the low back, knees and feet, due to postural deformity in the lower extremities. A good deal of the book has to do with the presentation of the author's theories regarding the influence of evolutionary adaptation upon the development of postural change in the human body. If one accepts all of the presented theory as being factual, then a great deal of his conclusions must be also accepted as being logical and reasonable. If the book does nothing except to point out the importance of the postural complex in this day and age when intervertebral disk pathology and surgical intervention is resorted to so extensively, it has accomplished a very worthwhile purpose.

The meat of the book has to do with the author's specific steps in assuring proper correction of stance in the foot in order to correct the imbalance produced by postural deformity in the remaining portions of the lower extremities and low back. Anyone who would take the time to study the author's methods and put them into practice would help a good many people overcome the disability due to postural back ache and postural disability in the lower extremities without doubt.

There is no question but that the author presents a very solid argument for his theory and that there is a good deal to be said for it in practical application and treatment of postural back ache. The one valid criticism and real criticism is that the author presents his theory as being the total and complete answer to the problem of low back disability. I doubt if this is entirely correct. It is a book, however, that should be read carefully by anyone having occasion to see any number of patients with low back disability of any kind.

* * *

PREPARING FOR MOTHERHOOD—Samuel R. Meaker, M.D., Professor Emeritus of Gynecology, Boston University, School of Medicine. The Year Book Publishers, Inc., Chicago Illinois, 1956. 196 pages, \$2.00.

Meaker's book on "Preparing for Motherhood," is an excellent little volume of 190 pages. It is a "manual for expectant parents." It tells the story of pregnancy and delivery and the postpartum period in simple, easily understood language. The information is up to date and strictly to the point. The author's views are conservative, and, I should say, representative of the majority opinion in the civilized world today. Satisfactory information is given about the early stages of pregnancy, its diagnosis, the symptoms and bodily changes. Early medical consultation is advised; the usual steps in antenatal examination and care are outlined. The most common complications are discussed, particularly in relation to the symptoms which might arise. Diet

is discussed in detail, in fact, in somewhat disproportionate detail. The events of labor are described and pain relief is discussed in terms of today's most usual routines, i.e. mild analgesia and sedation with Demerol and barbiturates or conduction anesthesia, particularly low spinal. Meaker does not attempt to impress a particular point of view, beyond that of conservatism. "Natural childbirth" is described in sympathetic but unenthusiastic terms. A very helpful portion of the book describes the after events and care, in relation to infant feeding whether breast or otherwise, exercises, checkup, examinations, etc. An attempt is made to bring the husband into the picture as much as possible in the interest of good psychological relationships. He is encouraged to be thoughtful and attentive to his wife during the antenatal period and to be with her during the first stages of labor whenever possible. His participation in the events of the puerperium, breast feeding, holding the baby, care in precluding the jealousy of prior children in the family, etc., are discussed very sympathetically.

A minor note of criticism. The print is too small for easy reading with my eyesight. However, the book would make a very acceptable assignment for certain sources of information for prospective parents.

* * *

PROTECTING CHILDREN IN ADOPTION—Report of a Conference. Children's Bureau Publication—354, 1955, Superintendent of Documents, U. S. Government Printing Office, 43 pages, 20 cents.

The above pamphlet is a report on a conference on adoptions, participating in which were representative delegates from all parts of United States. It is an exceedingly worthwhile pamphlet and should be in the hands particularly of obstetricians and pediatricians. However since many doctors adopt children into their own families or advise other families regarding adoption it would be well for every medical person to be acquainted with its contents.

The first part of the conference was devoted to a summary of a study that was made by a single individual who visited different parts of United States in order to obtain direct information concerning adoption practices. Two places reputed to be practicing black marketing of babies were visited but areas that have good and workable laws concerning adoption procedure were also studied.

The report to the conference included figures on demand and supply of babies, studies on the prenatal care of unmarried as compared with married mothers, a summary of community resources and a review of state legislation. As the conference came under way the following subjects were discussed: In one group the problems reviewed were: The "hard to place" children; agency versus non agency placements; the Federal control question, and a "definition of terms." The second group discussed "professions in the forefront" under which the viewpoints of physicians, lawyers, social agencies, and other professionals were presented. The third group concerned itself particularly with "the child as the rallying point." The fourth section is the work groups' report, under the following headings: (1) philosophical and ethical considerations, (2) education, (3) extension of services, and (4) legislation, especially the Uniform Adoption Act and Inter-County Adoptions.

The pamphlet is highly recommended.

* * *

CHEST X-RAY DIAGNOSIS—2nd Edition—Max Ritvo, M.D., Assistant Clinical Professor of Radiology, Harvard Medical School. Lea & Febiger, Philadelphia, 1956. 640 pages, 633 illustrations on 426 engravings and 1 color plate, \$16.00.

This second edition of a monograph dealing with the x-ray diagnosis of diseases of the chest is patterned essentially

on the first one. There are sections on roentgen methods of examination of the lungs, mediastinum, diaphragm and pleura. Then sections on diseases of the bony thorax and soft tissues of the chest wall, soft tissues of the neck, heart and great vessels, and pericardium. The introductory material remains sound and the suggestions for methods of interpreting roentgenograms are useful.

It appears to this reviewer that the importance of stereoscopy and lateral projection might be stressed a little more firmly. Thorough roentgen examination is a standard procedure in studying the gastrointestinal or urinary tracts, and should be a standard procedure in studying the chests of symptomatic persons. For this reason, lateral or oblique illustrations should accompany more of the anterior roentgenograms used to illustrate many of the diseases discussed in the text.

The author still apparently believes that bronchitis may be diagnosed by an anterior chest roentgenogram. The illustration and legend for this entity remains as in the first edition.

The illustration appearing on page 519 labelled "myocardial calcification" is identical with that appearing on page 478 of the earlier edition and is still labelled incorrectly (the entity shown is dense calcification of the mitral annulus).

Of more importance is the legend for figure 100 appearing on page 159. This reads "anthrocosis" when we suspect that the author means "anthrocosilicosis," since anthrocosis alone does not produce dense pulmonary nodular shadows of the type illustrated.

The volume is well printed and well bound. The index is adequate. It should be of value to students and general physicians.

* * *

MODERN TREATMENT YEARBOOK—1956—A Yearbook of Diagnosis and Treatment for the General Practitioner—Sir Cecil Wakeley, Bt., K.B.E., C.B., LL.D., M.Ch., D.Sc. F.R.C.S., F.R.S.E., F.R.S.A., F.A.C.S., F.R.A.C.S., Fellow of King's College, London, Editor. The Medical Press, London, Distributed in U.S.A. by Williams and Wilkins Company 1956. 344 pages, \$6.00.

Each yearly summary of medical activities has its own format. This one is composed of a group of monographs on treatment by various English authorities. The 1956 volume, twenty-second year of the series, contains 37 articles. They vary rather widely in form and quality. On the whole, they make interesting reading, but they fail to give the reader the quantity of recent medical and surgical research to which the American reader has become accustomed.

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LOS ANGELES COUNTY HOSPITAL HOUSE STAFF MANUAL—7th Edition—F. William Wagner, Jr., M.D., Editor; The Cunningham Press, Alhambra, California. 728 pages.

If one can imagine oneself as an intern, confronted suddenly with the complexities of a 3,411-bed hospital and the necessity of treating serious disease by the more-or-less remembered teachings of medical school, one can immediately visualize the principal usefulness of this manual. The 7th edition of the House Staff Manual represents the co-operative efforts of the combined attending and resident house staff of the Los Angeles County Hospital to provide the intern and resident within the hospital with specific advice relative to the operation of the hospital itself: To the diagnosis and treatment of various major categories of disease, (e. g. infectious disease, body fluid and electrolyte disorders, respiratory disease); and to the fundamental procedures of particular services (e. g. anesthesia, orthopedics, laboratory).

The manual is well printed and clearly written and will admirably serve its purpose as described. Certain specific merits and faults might be mentioned. The Spanish vocabulary is an unique feature; there is an excellent table showing the electrolyte content of various parenteral solutions; and revision of most sections has been brought up to the minute of printing. Other sections are less modern, tetracycline is not mentioned as an antibiotic. A section equilibrating the common name of substances with the poisons they contain, should be most useful, but the conversion table for milliequivalents per liter and milligrams per cent appears both on page 87 and page 628.

Lastly, it is painful to see, in a teaching manual, the word "pathology" used for "pathological process" and the name Burrow's, he of the solution, written with an additional "r."

* * *

A COURSE IN PRACTICAL THERAPEUTICS—3rd Edition—Martin Emil Rehfuss, M.D., F.A.C.P., LL.D. (Hon.) Professor of Clinical Medicine, Emeritus and Director of the Division of Therapeutics in the Dept. of Medicine, The Jefferson Medical College, Philadelphia; Allison Howe Price, A.B., M.D., Associate Professor of Medicine, The Jefferson Medical College, Philadelphia; Williams and Wilkins Company, Baltimore, 1956. 972 pages, \$15.00.

The third edition in eight years of this large and practical manual of treatment brings it up to date with fairly extensive revision of the sections dealing with the treatment of specific disorders and those concerned with specific drugs. In these fields there have been tremendous changes and the editors have done their best to keep abreast of them.

On the other hand, general therapeutic principles have not changed and there has been little alteration of this section, which is well presented.

As we have before, (76, 5, 366 (May) 1952) we recommend this volume to internists, to general practitioners and, particularly, to medical students.

* * *

MANAGEMENT OF PAIN IN CANCER—Edited by M. J. Schiffrin, Ph.D., Assistant Professor, Division of Anesthesiology, University of Illinois College of Medicine, The Year Book Publishers, Inc., Chicago, 1956. 245 pages, \$1.50.

This book is an admirable review of an important aspect of the management of many patients with incurable cancer. It should be of real value to any physician who undertakes the care even of an occasional patient with advanced cancer and who wants to achieve the best possible control of pain by methods both old and modern. The book is somewhat wider in scope than the title alone would indicate; there are discussions of the use of steroid hormones and chemotherapeutic agents and their palliative indications, of surgical measures for lesions in the respiratory, intestinal and urinary tracts which are of value in the general management of advanced cancer. Specific problems in the relief of pain are considered under the headings of "Systemic Analgetics," "Nerve Blocks" and "Neurosurgical Aspects" and there is a valuable discussion on the psychological aspects of pain.

The volume is not as bulky as its 245 pages would indicate as the pages measure approximately 7 x 4½ inches thus producing a volume of almost pocket-book size. Its format makes for easy reading. There is an adequate index.

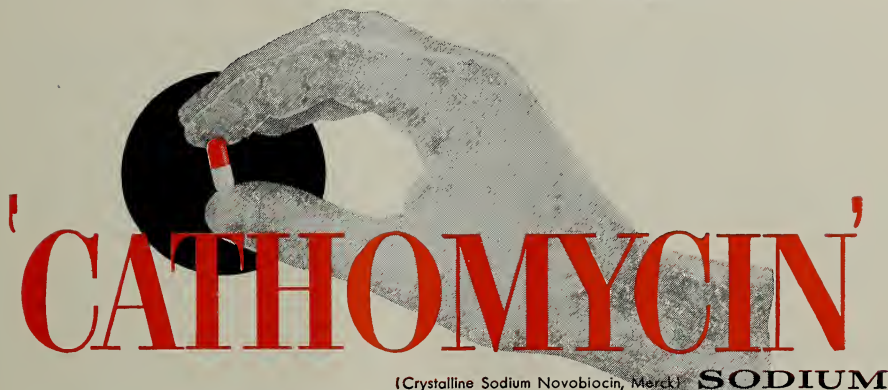
The chief deficiency is in the lack of illustrations or diagrams except in the chapter devoted to nerve blocks. Several of the authors condone a common and annoying semantic abuse in medical literature, the use of the word "malignancy" for malignant neoplasm or, even a more succinct generic designation, cancer.

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(Continued on Page 70)

Increase in Scurvy Caused By Baby Feeding Changes

The abandonment of "pot liquor" and "milk from the family cow" as traditional baby foods—and neglect of daily orange juice—were blamed for an increase in scurvy among infants in Tennessee.

Dr. Calvin Woodruff said in a recent issue of the *Journal of the American Medical Association* that the number of cases seen at Vanderbilt University Hospital, Nashville, had jumped from eight in 1926-1934 to 45 in 1950-1954. From 1926 to 1954 there was a total of 103 cases.

Scurvy, caused by a deficiency of ascorbic acid, occurs most frequently between the ages of seven and 11 months. It can produce bone deformities, and its symptoms sometimes are like those of poliomyelitis.

Ascorbic acid can be obtained from several sources, including orange juice (probably the best source), fresh unpasteurized milk, tomato juice, and even "pot liquor," the water in which green vegetables and fat meat have been boiled.

The abandonment of these old feeding customs and the sterilization of milk—without substituting anything for these sources of ascorbic acid—have resulted in the increase of scurvy.

He pointed out, however, that pasteurization of milk is desirable despite the resulting loss of ascorbic acid. Addition of ascorbic acid to baby formulas is a good practice, but the philosophy behind this should not be carried to the point where all nutrients needed by the infant are added to the milk formula.

"The most important attribute of a normal complete diet for children is a variety of food," he said, "and it is the responsibility of parents to help infants develop wide taste acceptance as early in life as possible. The importance of an antiscorbutic (ascorbic acid or a synthetic scurvy preventive) in the diet is a first lesson. Consequently it is unfortunate to have the point of this lesson lost in the maze of fortified formulas and multivitamin preparations with which we are confronted every day."

While children who cannot—or refuse to—drink orange juice should be given a substitute, for other children orange juice or some other natural ascorbic acid source is best, he said.

Supplementation by orange or other citrus fruit juice or vitamin preparation is "mandatory," he said, but in many cases has been neglected because this was not recognized, because of lack of adequate medical care or failure to follow medical instructions, and for economic reasons or through ignorance, carelessness, or neglect. . . .

The seasonal factors of price and availability of fresh fruit played no role in the cases seen by Dr. Woodruff.

(Continued on Page 64)



new


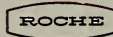
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Increase in Scurvy Caused By Baby Feeding Changes

(Continued from Page 60)

Symptoms of scurvy, which is sometimes confused with rickets, are varied, but irritability, tenderness of the legs and failure to move or use them are most characteristic, he said. Bleeding of the gums, a high temperature, bone changes, discoloration of eyelids and hemorrhaging skin lesions also appear.

The occurrence of scurvy in infants under five months is rare, since the infant is well-supplied with

ascorbic acid at birth. The virtual absence of scurvy in infants over two years is attributable to their more varied diet. Among adults scurvy has usually been associated with periods of prolonged dietary restrictions caused by long sea voyages, crop failures or wars.

Treatment consists of giving the child a small amount of ascorbic acid, usually in the form of orange juice. The response is dramatic, he said, and the infant is usually symptom-free within three or four days.

Dr. Woodruff prepared his report at the request of A.M.A.'s council on foods and nutrition.

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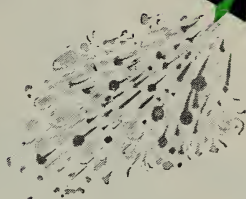
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On the occasion of its 100th anniversary celebration, Dr. Sidney Shipman, president of the California Medical Association, received a congratulatory telegram from President Eisenhower.

The wire said in part: "I am delighted to extend congratulations to its members on their organization's long record of service in the state and on their own continuing contributions to the well-being of the people of California. All of you have my best wishes for the years ahead."

—A.M.A. Secretary's Letter

Consultant Says Second Cousins May Marry

In a query to the *Journal of the American Medical Association*, a physician asked if it would be wise for a girl to marry her second cousin—the grandson of her father's brother.

The unnamed consultant said in a recent issue of the *Journal* that it would be all right—if the ancestry on both sides for three generations was sound physically, intellectually and emotionally.

The danger to any offspring of a marriage between cousins of sound ancestry would not be much greater than if the parents were unrelated, he said.

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(Continued from Page 70)

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Magnesium Salts May Overcome Delirium Tremens

Magnesium salts—used to prevent “grass staggers” in cattle after early spring grazing—may also help overcome delirium tremens in chronic alcoholism, according to a report by the American Medical Association’s council on foods and nutrition.

The normal adult human body contains less than an ounce of magnesium, but a deficiency can produce muscle twitching, excessive nervousness, tremor, delirium, and even convulsions, Dr. Edmund B. Flink, Minneapolis, said in the report of the council in a recent issue of the *Journal of the American Medical Association*.

The human symptoms are similar to those produced in cows, calves, and horses suffering “grass staggers,” a magnesium deficiency illness usually occurring one to two weeks after the livestock begins grazing on new spring grass. Symptoms of “grass staggers” include nervousness, restlessness, grazing away from the herd, lack of appetite, muscle twitching, unsteady gait, spreading of the hind limbs, gnashing of teeth, a wild look, and constant lowing.

Chronic alcoholism appears to be an important cause of magnesium deficiency symptoms in humans, Dr. Flink said. The symptoms can also result from prolonged intravenous administration of magnesium-free fluids.

(Continued on Page 82)

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Magnesium Salts May Overcome Delirium Tremens

(Continued from Page 76)

Patient's with cirrhosis of the liver who have very low blood magnesium levels are particularly apt to develop serious nervous and mental symptoms when ammonium salts are given as part of their treatment, he said, but magnesium treatment may counteract this.

Low blood concentrations of magnesium have been found in malignant conditions, epilepsy, congestive heart failure, lupus erythematosus, hyper-

thyroidism, inflammation of the pancreas, asthma, infantile tetany, and severe starvation. Outward signs of the deficiency have been seen in connection with diabetic acidosis, severe kidney disease, and toxemia of pregnancy.

Administration of magnesium salt to alcoholics in delirium tremens appears to be helpful, and to benefit other nonalcoholic magnesium-deficient patients with tremor or delirium, he concluded.

Dr. Flink is from the Veterans Administration hospital and the department of medicine of the University of Minnesota Medical School.

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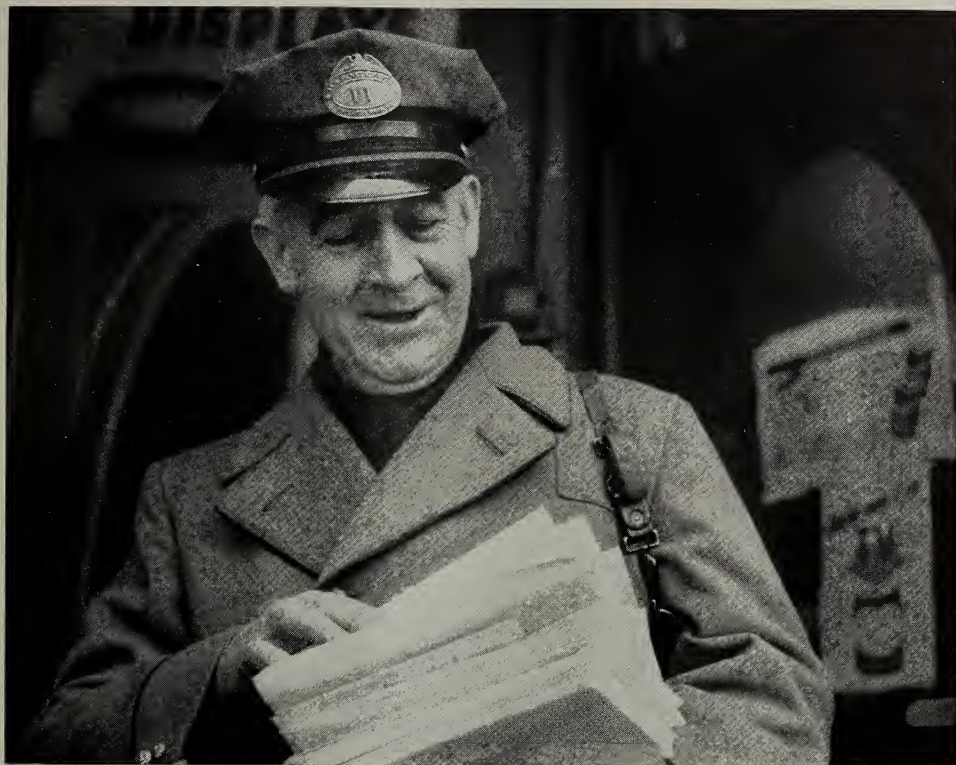
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Two reports recently gave further evidence of the value of a new "peace of mind" drug which induces sleep and a quiet detached mood in patients with acute alcoholism or mental illness.

The reports appeared in a recent issue of the *Journal of the American Medical Association*.

Promazine (Sparine) is similar to chlorpromazine (Thorazine), which has been used to treat these disorders for some time. However, promazine produced better results in alcoholic patients suffering ill effects from the withdrawal of alcohol—the first stage in treatment of alcoholism—than chlorpromazine did in a similar group of patients, Dr. Earl H. Mitchell, Washington, D. C., said.

He gave the drug to 141 chronic alcoholics undergoing treatment. Seventy per cent had one or more complications, including delirium tremens, cirrhosis of the liver, and acute alcoholic gastritis.

There was less lowering of blood pressure and fewer cases of accelerated heart beat than in treatment with chlorpromazine. Unlike chlorpromazine, there was little pain or local tissue reaction after the intramuscular injection of promazine. Dizziness or fainting on sitting up were the only side effects encountered by Dr. Mitchell.

Nausea and vomiting were promptly checked in 89 per cent of the patients, and, with few exceptions, it was possible to give food and fluids orally immediately after beginning treatment. Agitation and tremors were usually well controlled, he said.

Four other Washington physicians, Drs. Joseph F. Fazekas, John D. Schultz, Paul D. Sullivan, and James G. Shea, gave the drug for periods of five to 48 days to 262 alcoholics, 103 agitated or confused psychotic patients, and 42 narcotics addicts.

The drug was effective in inducing sleep and maintaining a quiet detached state in the patients. They were easily aroused from sleep to care for their personal needs, thus reducing considerably the work load of the medical, nursing, and attending staffs, the doctors said.

The underlying neurotic or psychotic states were not corrected by promazine. Dr. Mitchell said that severe anxiety and depression were partially relieved, with the patients appearing to be detached from their emotional symptoms and less perturbed by their discomfort. The other physicians said that psychotic patients' hallucinations were not abolished, but the patients "appeared unconcerned by them."

None of the serious complications which sometimes accompany chlorpromazine treatment developed, but the doctors warned that side effects, such as jaundice, agranulocytosis, dermatitis, or sensitization, might develop with longer administration of promazine.



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Suggest Central Leukemia Information Agency

A group of California researchers recently suggested that a central agency be established to collect information on children born of leukemic mothers.

Such an agency would offer a means of studying the causes of leukemia, a serious blood disease, on a wide scale, they said in a recent issue of the *Journal of the American Medical Association*.

The cause of the disease is unknown, although the possibility that it is virus-caused has been considered. Heredity also may play a role. Children born of leukemic mothers would be the best source of information on these possibilities, they said.

It is necessary to organize one agency to collect all this material, since it is highly improbable that any individual or institution would ever have the opportunity to study a sufficiently large number of similar cases to warrant statistical treatment, they said.

There have been at least 50 reported instances of leukemic mothers giving birth to living infants.

None of the babies showed evidence of leukemia, according to the reports. There were no detailed studies of mother and child in the immediate post-delivery stage to determine similarities and differences in their blood. Moreover, follow-up studies of such offspring have been "sadly neglected," they said.

The authors recommended that records include information on the leukemic mother's illness, hereditary background, conditions at times of delivery, and extensive blood studies of both mother and child in the days immediately following delivery. In addition, the child should be followed thrice yearly until age five and once a year thereafter.

The suggestion was made by Dr. Howard R. Bierman, Dr. Keith Kelly and Miss Fauno L. Cordes of the Hospital for Tumors and Allied Diseases and the division of research of the City of Hope Medical Center, and Dr. Paul M. Aggeler and Dr. Hulda Thelander of the Children's Hospital, San Francisco. The study was supported in part by the Leukemia Research Foundation of Los Angeles, Inc.

"Yellow" Mice Used in Arthritis Experiment

In the long search for the cause of degenerative joint disease many experimental methods have been used. One, involving "yellow" mice, which develop osteoarthritis similar to that in humans, was reported in a recent issue of the *Archives of Pathology*, published by the American Medical Association.

Three St. Louis researchers said obesity "has long been incriminated" as a causative factor in osteoarthritis. In order to test this contention they set up an experiment with the "yellow" strain of mice.

While their work did not prove that osteoarthritis is caused by obesity, it did contribute some information about the effect of nutritional factors on the disease. They found that excessively obese mice developed the disease sooner and in a severer form than did nonobese mice. They also found that high-fat diets accelerated the onset of the disease and shortened the life span more than high-carbohydrate diets did.

A litter of "yellow" mice can include two types of mice—those with a gene which produces a yellow coat, and those without the gene, which have normal gray coats. Yellow-coated mice become obese if fed enriched diets, while the gray-coated ones do not. Thus the relationship of degenerative changes to weight could be compared in the two groups.

The 344 mice were divided into three groups and were fed diets high in carbohydrates, high in fats, or well-balanced. The animals were permitted to live to the end of their lives, with the life span varying

according to the type of coat and sex. Gray-coated females lived the longest.

The researchers found a relatively high incidence of joint disease in all the yellow-coated animals—as well as in the gray-coated females—regardless of what they ate. But the incidence was greatest in yellow-coated animals which had become obese on the enriched diets.

The high-fat and high-carbohydrate diets did not produce obesity in the gray-coated animals, although the high-fat diet did cause a slight weight gain in gray-coated females. It also accelerated the course of osteoarthritis in the females. The carbohydrate diet exerted injurious effects on the joints only of the yellow-coated mice, they said.

Of the mice on well-balanced diets, both yellow-coated and gray-coated males weighed more than the females. However, these weight differences could not be related to joint disease differences.

The authors pointed out that excessive obesity probably had some influence on the course of osteoarthritis, but it is possible that the high incidence in yellow-coated mice may result in part from other factors, such as an hereditary predisposition or an endocrine imbalance.

The study, which was supported by grants from the American Cancer Society and the National Institute of Arthritis and Metabolic Diseases of the National Institutes of Health, was done by Martin Silberberg, M.D., Susan F. Jarrett, and Ruth Silberberg, M.D., from the Snodgrass Laboratory of Pathology, City Hospital Division, and the Washington University School of Medicine, St. Louis.

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*T.M. Reg. U.S. Pat. Off. for chlorpromazine, S.K.F.

1. Karp, M., et al.: Am. J. Obst. & Gynec. 69:780 (April) 1955.

Seamless Synthetic Artery Graft Used Successfully

A preliminary report on the use of a new seamless synthetic tube for artery grafts was made recently by five North Carolina physicians.

Since the first use of grafts to replace sections of damaged arteries the search has continued for the perfect graft material, the doctors said in a recent issue of the *Journal of the American Medical Association*. The report was made by Drs. Paul W. Sanger, Frederick H. Taylor, Robert E. McCall, Ronald Duchesne, and Gilles Lepage, Charlotte, N. C.

Knitted Orlon and woven nylon have proved satisfactory in many ways, but seams in the tubes created

technical problems of having to sew through four layers of materials where the seams overlapped.

Prof. W. E. Shinn of North Carolina State College school of textiles devised a method for knitting Orlon into seamless straight and y-shaped tubes, and John B. Sidebotham, Philadelphia, has woven seamless nylon tubes.

Both the knitted and woven tubes have been used as grafts in dog and human aortas with equal success, the five doctors said. They and 33 other surgeons have used the grafts successfully in 54 patients.

Only time will show for certain whether the synthetic grafts are superior to anything that has been

(Continued on Page 14)



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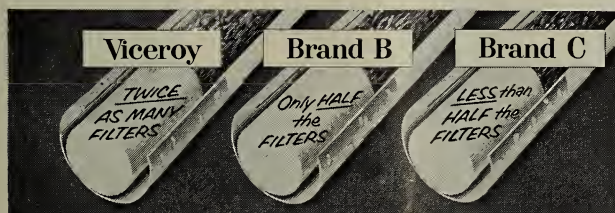
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Viceroy's exclusive filter is made from pure cellulose—soft, snow-white, natural!



Seamless Synthetic Artery Graft Used Successfully

(Continued from Page 12)

used to date, but their advantages are many, they said. The grafts are inexpensive, compact, and easily stored, and can be heat-sterilized with no difficulty. They do not stretch lengthwise, but do stretch enough to permit pulsation as in a normal artery. They are nonirritating when placed in the body and are resistant to breakdown and deterioration. The mesh of the knitted tube allows some blood to seep through, clot, and form a natural covering like a new artery around the substitute tube, the authors explained.

Elastic Suit Devised as Hypotension Treatment

The pattern of grandpa's red flannels has been altered slightly and used to make a pressure suit for people with a serious type of low blood pressure.

The tight-fitting suit, made of elastic cotton-rayon knit material, applies pressure over the lower half of the body and helps prevent a patient with orthostatic hypotension from fainting when he stands up. For some it allows a return to work or enables standing for longer periods on the job.

The garment is described in a recent issue of the *Journal of the American Medical Association* by

(Continued on Page 18)

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Elastic Suit Devised as Hypotension Treatment

(Continued from Page 14)

Herbert O. Sieker, M.D., John F. Burnum, M.D., John B. Hickam, M.D., and Kenneth E. Penrod, Ph.D., of the departments of medicine and physiology, Duke University School of Medicine, Durham, N. C.

Orthostatic hypotension—sometimes called postural hypotension—results from the inability of peripheral arteries to constrict and maintain enough pressure to force the blood back to the heart. The condition may be associated with diabetes mellitus or may follow a sympathectomy, an operation to

relieve excessively high blood pressure. In other cases its cause is unknown. A person with the disorder is all right as long as he is lying down, but when he stands, there is a sudden drop in blood pressure and he becomes faint.

A number of methods have been used to treat the condition with varying amounts of success. These include the administration of salt or drugs, use of elastic stockings and abdominal binders, and immersion of the lower half of the body in water. The suit, which keeps a steady pressure on the body and the arteries, appears to be more effective and practical than any of the other mechanical methods, the authors said.

(Continued on Page 22)

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6,000 Alien Physicians Training in United States

More than 6,000 foreign physicians are in the United States this year to complete their professional training as interns or residents, while more than 1,700 Americans are studying at foreign medical schools.

A survey of foreign physicians in the United States was made by the Institute of International Education and the American Medical Association. It is reported in a recent issue of the *Journal of the American Medical Association* by Dr. James E. McCormack and Arthur Feraru, New York.

The study showed that 1,730 Americans are studying in 26 different countries. Switzerland, Italy, Canada, Netherlands and Belgium each have more than 100 American students. The University of Bologna (Italy) has the largest number, 243 American medical students. The next five are the University of Geneva (Switzerland), 215; University of Lausanne (Switzerland), 159; McGill University (Canada), 159; University of Leiden (Netherlands), 70, and University of Heidelberg (Germany), 54.

The 6,033 foreign physicians in the United States are training in 764 hospitals listed as approved for internships and residencies by the American Medical Association's council on medical education and hospitals. This is almost a thousand more physi-

cians than the 5,036 reported in 1954-55. Approximately 47 per cent first came here this year.

Of the group, 1,859 are interns and 4,174 are residents; 86.6 per cent are men and 13.4 per cent are women. They are distributed among all but four of the states, with 1,535 in New York. Only Idaho, Nevada, New Mexico and Wyoming have no foreign physicians in training. Thirteen states reported more than 100 aliens.

The visitors came from 84 different countries, with the Philippine Islands, Canada, Mexico, Germany, Turkey and Italy sending the greatest number.

The number of foreign faculty members in the United States provides an additional indication of America's drawing power in the field of medicine, the authors said. Of the 782 foreign professors in the United States this year, 192 are listed in the field of medicine. Only 45 of the 1,275 American professors abroad are in medicine.

The survey does not include alien physicians who are in the United States taking graduate courses or engaged in research, immigrant physicians, and Americans who studied medicine abroad.

Dr. McCormack is assistant vice-president of Presbyterian Hospital, New York, and Mr. Feraru is coordinator of the policy planning and statistical research staff of the Institute of International Education.

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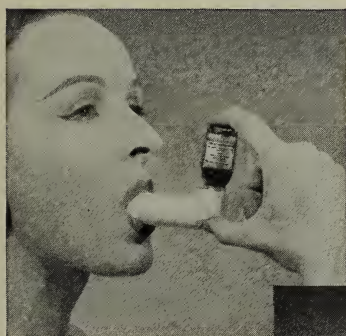
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LOS ANGELES

Elastic Suit Devised as Hypotension Treatment

(Continued from Page 18)

Six patients were individually tailored suits during their waking hours for periods up to 24 months. Four patients found the suit so practical and comfortable that they were able to return to part-time work and to carry on daily activities involving longer periods of standing than they had previously been able to endure.

The long-legged and sleeveless suit has zippers in

the front of the trunk and on the sides of the legs to aid in donning it. The material is porous, lightweight, and maintains its original elasticity after months of wearing and washing, the authors said.

They concluded that the suit was of "significant help" in rehabilitating patients with severe postural hypotension.

The study was supported in part by research grants from the National Heart Institute of the National Institutes of Health, and the Life Insurance Medical Research Fund.

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New Clamp Without Handles Devised for Aortic Surgery

A new clamp without handles for use during blood vessel surgery was described in a recent issue of the *Journal of the American Medical Association*.

The clamp is used to stop the flow of blood through the aorta during surgery to remove an aneurysm—a blister-like bulge in the wall of the aorta.

Older clamps with long handles have proved cumbersome and difficult to apply when space is limited, Dr. J. Karl Poppe, Portland, Ore., said. This is particularly true when two clamps are required, one on

either end of the aneurysm. The ends of the new clamp are held together with winged nuts so that adjustments for thickness of the aneurysm neck and tension can be made.

The new clamp's long sturdy jaws overcome another disadvantage of the older clamps in which the blades sometimes were too short to extend across the entire neck of a large aneurysm. A slight inward bowing of the middle of the new clamp's blades prevent it from slipping sideways, Dr. Poppe said.

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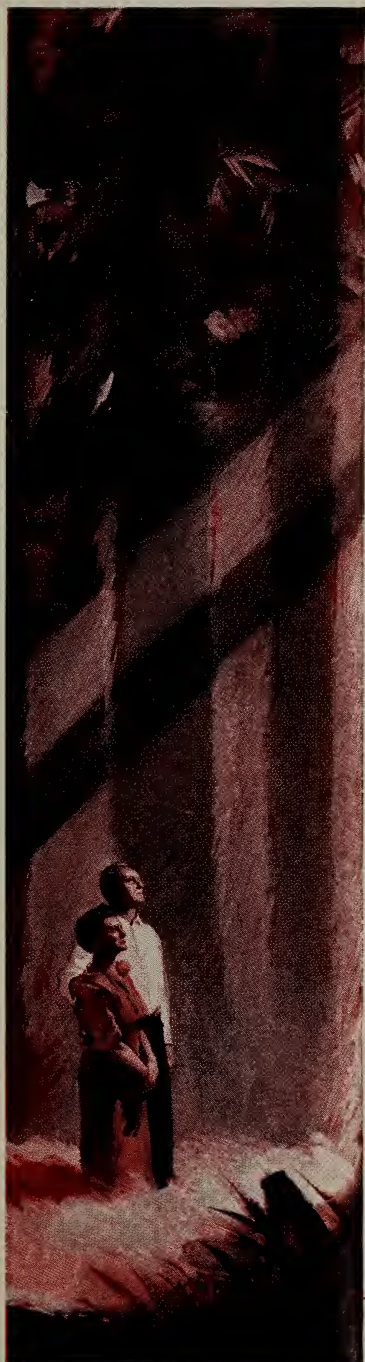
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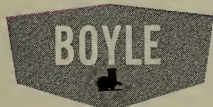
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Physician Calls for Better Nutrition in Aged

Better nutrition in old age—as well as in earlier years—will help “add life to years, not just years to life,” a Massachusetts physician stated recently.

Good nutrition will slow the aging process, making it possible to live longer and grow old more comfortably, Dr. Max Millman, Springfield, Mass., said in a recent issue of *Today's Health*, published by the American Medical Association.

Malnutrition, present in a “significant segment” of the population, is detrimental to people in all ages, but especially to those above middle age, when resistance to disease is lowest, he said.

The most common reason for malnutrition in the aged is the “rigidity of their eating habits,” Dr. Millman said. Many older persons fail to eat enough meat, vegetables and milk, because they never have.

Decayed or missing teeth or ill-fitting dentures also contribute to the problem by forcing oldsters to exclude all solids from their menus. Habit again may take over and doom these people to diets of soft, mushy and soupy food. The remedy, he said, is quite simple; correction of the dental problems by a dentist.

Another factor is money. The aged who have to get along on shrunken budgets often feel that meat, fruits and vegetables are too expensive, so they eat

starches which are cheaper and easier to obtain, prepare and eat. A better knowledge of food values and cost coupled with proper marketing and budgeting can insure an adequate diet on a modest or even meager income, he said.

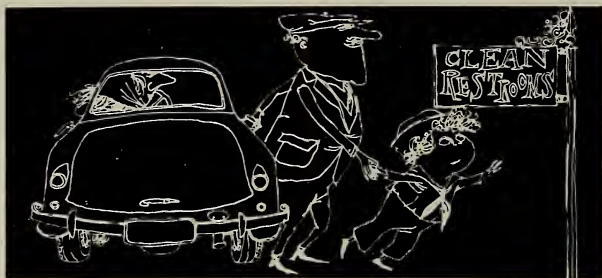
Malnutrition usually suggests underweight, but sometimes it is masked by overweight. Obesity in the aged often proves disabling, in addition to predisposing its victims to diabetes, high blood pressure, and heart disease, all especially dangerous to the aged. Reducing is more difficult for the aged, not because their fat is “glued” on more firmly, but because their eating habits are rigid. Thus weight reduction should be begun as early in life as possible, he said.

The diet needs of the normal oldsters are almost, but not quite, the same as those of a younger person. The elderly need fewer calories because advancing age lowers metabolism and diminishes physical activity.

According to the Food and Nutrition Board of the National Research Council, a man at 65 requires 600 calories a day less than the 2,400 to 3,000 required at 25. In women the difference is 500 calories, or 1,500 to 1,900 daily.

Dr. Millman suggested that the daily diet of the

(Continued on Page 38)



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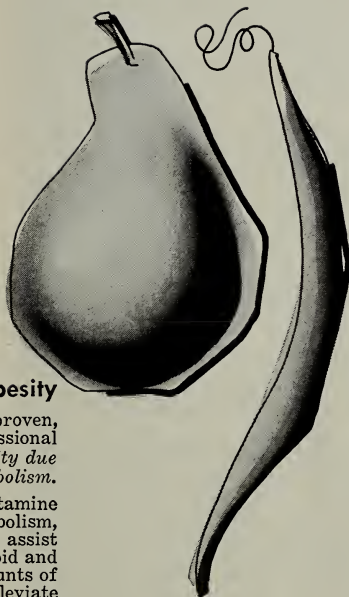
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Children Under Five Respond Well to Polio Vaccine

Polio vaccine appears to work as well in infants and preschool children as it does in school children, providing they receive at least two and preferably three inoculations, a recent Michigan study has shown.

Field trials of the Salk polio vaccine were carried out in 1954 among first, second and third grade children. Although the age range was extended greatly in 1955, little information has been obtained about responses in different age groups.

Since most immunization programs are begun in the early months of life, information about the response of infants to the polio vaccine is important, Gordon C. Brown, Sc.D., and Donald C. Smith, M.D., Ann Arbor, Mich., said.

They found that three inoculations evoked a satisfactory response in infants and in children one to five years old. Two inoculations appeared to be less effective and one injection in infants was definitely inadequate, they said in a recent issue of the *Journal of the American Medical Association*.

A booster inoculation six months after the first series raised the number of antibodies in the children's blood regardless of how many initial inoculations they had, or how they responded to the first shots. Even those who did not respond to the original vaccination did develop antibodies after the booster shot.

The researchers studied the responses of 135 infants and 116 preschool children. They were divided into five groups; each group received vaccines, made by different companies, on different dosage schedules.

The response to the vaccine was checked by means of a virus neutralization test, which measured the ability of antibodies in the patient's blood serum—when mixed with virus—to prevent infection of a tissue culture by the virus. Three types of virus were used in the test.

In two groups receiving three injections of different vaccine at monthly intervals, the majority of infants, including those under six months, responded with increased antibodies to all three types of vaccine. In another group that received two injections, the response was not as good as in those receiving three inoculations. A group of infants receiving only one injection did not respond at all.

A fifth group responded well to the booster shot despite the ineffectiveness of their original shots, which consisted of weakened vaccine.

The researchers concluded that infants and preschool children respond well to poliomyelitis vaccination and that the vaccine should be effective in these age groups.

Also investigated was the transmission of antibodies from mothers to their newborn infants. Preliminary observations suggested that even when the

(Continued on Page 38)

ACHROMATISM



Physician Calls for Better Nutrition in Aged

(Continued from Page 30)

aged person include one pint of milk; butter or margarine fortified with vitamin A; peanut butter or other vitamin rich fats; and one serving each of oranges, grapefruits or tomatoes; green or yellow vegetables; potatoes or other vegetable or fruit; whole grain cereal; eggs; meat, poultry or seafood, and enriched or whole grain bread.

The diet should contain ample protein, which the aged often find difficult to retain in their systems. Less than the usual amount of fat and oil seems advisable because the percentage of body fat in the elderly is greater than in the young.

Children Under Five Respond Well to Polio Vaccine

(Continued from Page 34)

mother has a high antibody level, the amount found in the infant is low for three to four months and it can rarely be detected by the age of five to six months. This portion of the study will be completed soon, they said.

Dr. Brown is from the department of epidemiology of the University of Michigan School of Public Health and Dr. Smith is from the department of pediatrics and communicable diseases of the University of Michigan Medical School. The study was aided by a grant from the National Foundation for Infantile Paralysis.

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1. Braceland, F.J.: Texas State J. Med. 51:287 (June) 1955.

2. Lemere, F.: Northwest Med. 54:1098 (Oct.) 1955.



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Medical Students' Income Sources Listed

As thousands of boys and girls are graduated from high school this month, Dr. Elmer Hess, past president of the American Medical Association, recently offered a word of encouragement to those who would like to attend medical school.

Quoting figures from the Association of American Medical Colleges, Dr. Hess said that the most important sources of students' income in 1955-56 were vacation earnings, personal earnings of the student during the year, earnings of the student's wife, gifts from parents and the G.I. Bill.

Dr. Hess said that while he did not want to encourage students to take on the added responsibility of a family, it is a fact that the largest average amount of income was wives' earnings. Eighteen per cent of the students reported that their wives' earnings, averaging \$2,500, was the largest source of income.

Last year the largest group of medical students (33 per cent) came from families in which the father was a laborer or in the lower levels of business. Only 10 per cent were children of physicians, while 25 per cent were children of executives or

(Continued in Back Advertising Section, Page 50)



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*Steigmann, F., and Goldberg, E.: Ambulatory Continuous Drip Method in the Treatment of Peptic Ulcer, Am. J. Digest. Dis. 22:67 (Mar.) 1955.
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California M E D I C I N E

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Number 2

The Management of Postpartum Hemorrhage

ALLAN C. BARNES, M.D., Cleveland

A PHYSICIAN who is responsible for even one obstetric patient has the threat of a postpartum hemorrhage hanging over him. He may avoid the problem of diabetes in pregnancy by simply referring diabetic pregnant patients elsewhere for care. Similarly, the problem of heart disease in pregnancy can be avoided. But there is no way he can avoid the problem of postpartum hemorrhage, for there is no warning sign by which it can be anticipated. Postpartum hemorrhage remains, therefore, a topic about which all of us must think and for which each of us must be prepared.

The recent interest which has been aroused by the phenomenon of hypofibrinogenemia has served the very important function of redirecting attention to some of the mechanisms which are involved in this dread complication. This same revival of interest, however, and this same body of literature has had the disadvantage of making a statistically uncommon cause of hemorrhage appear to be far more frequent than it actually is. Upon careful review of the literature on hypofibrinogenemia it can be observed that some patients have been reported from more than one institution, and that in many of the case reports there is the *presumption* of a decline in fibrinogen rather than *proof* of fibrinogen depletion. Of this mass of articles one might safely say that seldom has so much medical literature been owed to so few patients based on so small a number of

laboratory determinations. While the problem is an important one it is not a frequent one, and it would be well to consider the subject of postpartum hemorrhage with that in mind.

Table 1 indicates the frequency of obstetric hemorrhage at MacDonald House, Cleveland, calculated per 1,000 live births. As MacDonald House is a teaching hospital, there may be an increased frequency of complicated obstetric problems referred to the obstetrical service, but in general this is probably an accurate reflection of the experience of many hospitals. It can be seen from this table that of every 100 women who delivered at term, about 15 had some form of obstetrically-related bleeding. But it can also be seen from this table that even in an institution receiving such desperate referrals, the problem of proven hypofibrinogenemia is far less frequent than is the problem of postpartum hemorrhage stemming from other causes.

Therefore, considering these topics not from the point of view of the amount of attention they have been receiving recently, but from the point of view of the frequency of occurrence in the delivery room, it might be well to start by asking ourselves the question: What makes the postpartum patient stop bleeding? In normal circumstances, why does not a woman become completely exsanguinated in the first few minutes following the delivery of the placenta? In an effort to approach the answers to these questions, some time ago a series of careful measurements of postpartum blood loss was carried out. During the period of the study the various

From the Department of Obstetrics and Gynecology, Western Reserve University School of Medicine, Cleveland 6, Ohio.

Guest Speaker's Address: Presented before the First General Meeting at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

TABLE 1.—Causes Obstetric Hemorrhage (Stated in Number of Cases per 1,000 Live Births) Observed on Service of Department of Obstetrics and Gynecology, Western Reserve University School of Medicine

Abortion	95.3
Therapeutic abortion	2.4
Ectopic pregnancy	8.3
Abruptio placenta	
With stillbirth	5.1
Live born	19.6
Placenta praevia	5.3
Low implantation	2.8
Postpartum hemorrhage	13.2
Rupture uterus	0.5
Placenta accreta	0.5
Hypofibrinogenemia	1.2

factors which it was felt might influence the duration and amount of postpartum bleeding were deliberately altered.

Initially the patients were given dicumarol during labor and on into the puerperium, and although the prothrombin level of the treated patients was held considerably below that of the control group, there was no increase in the amount of postpartum bleeding. Similarly, a group of women were given heparin, which increased the clotting time during the immediate puerperium to between 20 and 30 minutes, and again when compared with the control group of patients there was no increased loss of blood from the uterus. During the time that these studies were being carried out, the opportunity arose to deliver a patient who had a platelet count of about 64,000 per at the time of delivery. She had bleeding into the renal pelvis and rather constant hematuria. There was bleeding from the gums and multiple ecchymosis, but there was no increased loss of blood from the interior of the uterus. Similarly, in cases reported in the literature in which delivery was done in the face of thrombocytopenia, one finds a record of hemorrhage from abdominal incisions or into episiotomy wounds, but not the frequent occurrence of postpartum bleeding from within the uterus proper.

In a negative sense, it would appear, therefore, that the answer to the question as to what stops postpartum bleeding does not lie in the prothrombin level of the blood (actually the postpartum patient normally has a prothrombin value of between 110 and 125 per cent) nor in the clotting time of circulating blood, nor in the platelet count. One must look elsewhere than in these fractions of the clotting mechanism to find the normal control of postpartum blood loss.

As these measurements were continued and the increased loss of blood was related to the various possible factors observable in the course of the patient's pregnancy, labor and delivery, a variety of situations were encountered which would increase the loss of blood and even on occasion put it over

500 cc. and into the range of postpartum hemorrhage. The depth of anesthesia and the agent used had such an influence; so also did retained secundines; increasing parity and overdistention of the uterus as with twins had a significant association with increased amounts of postpartum bleeding.

All these factors, of course, simply contribute to diminishing the efficiency of the postpartum uterine contraction. The study served to reemphasize that, for the average patient in normal circumstances, the control of the amount of blood lost from the interior of the uterus is principally based on the efficiency of the uterine contraction. Actually, the open sinuses of the placental bed represent a tremendous defect in the integrity of the patient's vascular system. If a surface area were dissected off the anterior wall of the vena cava, proportionate to the defect that is represented by the open maternal sinuses in the placental bed, the patient would be expected to exsanguinate quite quickly. Yet this same sized defect does exist in each parturient at the time the placenta is delivered, despite which the loss of blood stays within reasonable bounds. In usual circumstances, obviously, this large defect is closed not by the patient's clotting mechanism, but by the ligature effect of the myometrial muscle bundles. The contraction of the myometrium associated with and following the expulsion of the placenta serves to close the maternal sinuses and to prevent excessive blood loss. If this ligature is effective, then administering dicumarol or heparin will not measurably alter the bleeding. Stating this principle not from the point of view of etiology, but from the point of view of therapy, we could say that the contracted uterus does not bleed, and that therapeutic efforts should be initially directed toward getting the uterus effectively contracted. Therefore, a rational approach to the problem of the control of postpartum bleeding would be a review of those factors which commonly can interfere with the effectiveness of the uterine contraction.

Under the heading of the systemic causes of ineffective myometrial contraction, we should note:

A. General anesthesia. Faced with a tetanically contracting uterus and the threat of uterine rupture, a physician would instantly think of ether, because of its known paralyzing effect on the uterus. Yet it is remarkable how often it is forgotten that a bleeding patient who has been under a general anesthesia must be reawakened as rapidly as possible. When the objective is to achieve efficient uterine contraction, the presence of the most effective known uterine relaxer in the patient's system is obviously an enemy.

B. Shock. The patient in surgical shock has an ineffective contraction of the biceps and it is absurd to expect her to have effective contraction of the

uterus. A woman in shock has poor uterine contractility, and poor uterine contractility spells increased uterine bleeding.

C. Anemia and debility. The expression "blood loss breeds the loss of blood" stems from the diminished effectiveness of uterine contraction in this group of patients.

Those causes which are uterine would include the overdistention associated with twins or with a mole; intramural fibroids; and lacerations of the uterus sustained during delivery itself. Those local factors which are intrauterine are represented overwhelmingly by retained secundines and the presence of intrauterine "clots." The word "clot" is placed in quotation marks because, of course, postpartum blood by itself cannot clot. It has no clotting mechanism, and even the addition of calcium or fibrinogen or of thromboplastin will not result in its clotting. This nonclotting blood from the puerperal uterus can, however, be caused to coagulate by seeding it with small amounts of venous blood. The resultant clot is jelly-like, noncontractual, and ineffective in so far as hemostasis is concerned. Indeed such a clot, by holding open the placental bed, can increase the amount of blood a patient loses.

These factors—each of them contributing to an increase in the amount of blood that the postpartum patient loses—are stressed here not because of their newness, nor to deny the importance of the hypofibrinogenemia state, but rather to reemphasize the fact that a successful and efficient contraction of the uterus is one of the essentials in puerperal hemostasis.

It must be pointed out, however, that this uterine contraction never provides an entirely successful ligature. If it did, there would be no postpartum blood from the uterus at all; if it did, the presence of hypofibrinogenemia might not result in uterine hemorrhage.

Hypofibrinogenemia can be caused by three obstetric conditions: (1) The retention of a dead fetus in a missed abortion; (2) amniotic fluid embolus; (3) abruptio placenta. When a depletion of the fibrinogen level takes place in association with any of these conditions, it can lead to massive loss of blood through that portion of the placental bed which is not "ligated" by the uterine contraction.

With respect to the intrauterine retention of a dead fetus, hypofibrinogenemia will not develop if fetal death has taken place before the fourth month of gestation, and does not appear until at least five weeks after fetal death. If the patient fulfills these criteria of having achieved more than four months of pregnancy and of carrying a dead fetus for more than five weeks, fibrinogen determinations should be made at regular intervals. It is well to remember that a depletion of the fibrinogen in the circulating

blood does not occur in all such cases. Pritchard and Ratnoff performed such serial fibrinogen determinations on 31 women after fetal death, and in 23 of them found no evidence of a critical depletion of fibrinogen. Any therapeutic interruption of the pregnancy, however, should be done only with accurate knowledge of the fibrinogen level and only when adequate fibrinogen for replacement is present.

As to amniotic fluid embolus, it is well to remember that the patient is in shock. Replacement of the fibrinogen and evacuation of the uterus will not by themselves completely stem the uterine hemorrhage unless the shock is treated simultaneously with oxygen, transfusions and vasopressor drugs.

With respect to abruptio placenta, it should also be noted that not all patients with either partial or complete abruptio have depletion of circulating fibrinogen. Diagnosis in the form of a determination of fibrinogen levels is imperative before treatment can be intelligent or effective.

A method for rapid determination of fibrinogen levels stems from a suggestion made by Page. One centimeter of the patient's venous blood when added to two drops of reconstituted topical thrombin will immediately clot regardless of the fibrinogen level. However, within one or two minutes, in the presence of hypofibrinogenemia, this clot will contract and extrude its red cells; whereas, with adequate levels of fibrinogen this clot will remain intact. This determination gives a sufficiently rapid and sufficiently accurate indication of the fibrinogen levels that it should be carried out promptly on all patients with postpartum uterine bleeding. Fibrinogen therapy should not be carried out unless this test indicates necessity for it, and should be persisted in until the test indicates the reestablishment of normal levels.

With these principles in mind, it would be well to review the steps that should be taken in the management of a patient with postpartum hemorrhage:

A. Exploration of the lower uterine tract. In one of the most dramatic cases of postpartum hemorrhage observed by the author in the past 18 months, the patient was transferred to MacDonald House from a nearby community with presumed hypofibrinogenemia. Upon careful examination, a paracervical laceration in the left fornix was noted. The romance of the possible diagnosis of hypofibrinogenemia had resulted in overlooking a source of bleeding that was cured with two sutures.

B. Exploration of the interior of the uterus. It is imperative to know that the uterus is empty of any large placental portions and that it is not lacerated. If a physician is to be slow and reluctant to put an examining hand into the interior of the uterus, then his patients are not truly benefiting from the age of the sulfonamides and antibiotics.

C. Uterine evacuation. Both by the exploring hand, as well as by curettage—either with a gauze curette of a sponge over the fingers or with a large sized metal curette and placental forceps—the physician must make sure that the uterus is properly evacuated.

D. Holding the uterus. With a hand in the vagina and a hand on the abdominal wall, the uterus can be compressed, temporarily abating the flood of blood. Such compression not only replaces the contractile force of the myometrial muscle bundles temporarily, but also provides manual stimulation to irritate the uterus into its own contraction.

E. Oxygenation of the patient. A patient who has been under general anesthesia must be “flushed out” and awakened as rapidly as possible. A patient who has been under regional block will likewise benefit from the administration of oxygen at this point.

F. The prompt placement of an intravenous needle. Initially infusion of 5 per cent glucose solution can be started and it is well to add 1 cc. of Pitocin (oxytocin injection U.S.P.) to the first bottle of fluid. The presence of a large needle in the vein beforehand (to avoid difficulty in placing it in event of peripheral venous collapse), the administration of the fluid itself and the continuous intravenous administration of Pitocin are all of imperative importance at this moment.

Such a therapeutic approach represents a balanced attack on the problem of postpartum hemorrhage, which is based on the fundamental principles involved and the frequency with which the various entities are encountered. Three additional comments should perhaps be made:

1. What is the place of intrauterine packing in a regimen such as this? Probably, in accordance with these principles, the answer is that it has no place at all. On the one hand, the manual compression of the uterus can provide a greater oc-

clusive force to the placental sinuses than can gauze, and on the other hand the presence of the packing within the uterus works against the fundamental principle, herein advocated, that the empty contracted uterus will not bleed. Probably in those circumstances in which gauze packing is actually placed within the uterine cavity proper instead of in the lower uterine segment, it serves on the one hand only to hold the placental sinuses open, and on the other hand, like the wick in a kerosene lamp, serves as an easy route to conduct the blood to the outside.

2. It is well to bear in mind with regard to oxytocic medications that both the alkaloids of ergot and the extracts of the posterior pituitary are nitrogenous products which, in solution, gradually lose their potency. Thus, ergotrate bears an expiration date, although the fact is overlooked by many hospital purchasing agents. It should be icebox-stored, although most hospital pharmacists store it on the open shelves. It should be transferred to the delivery room in small amounts and the ampules used in sequence, although many floor supervisors persist in ordering an estimated week's supply and letting it languish in the delivery room several days while it loses strength. A certain amount of “policing” of the logistics of the oxytocic medications, getting them from the manufacturer to the patient in short order and good condition will reduce the number of cases of excessive bleeding after delivery.

3. Blood replacement remains imperative. It has been truly said: “The hemorrhaging patient dies from the loss of one red blood cell.” The body mechanisms can adjust to progressive hemorrhage up to a certain point. At that point the homeostatic adjustments to hemorrhage are defeated. Unfortunately, the physician does not know which red blood cell may represent the turning point. All of them must be replaced, and replaced promptly, to save a patient with severe bleeding.

2105 Adelbert Road, Cleveland 6, Ohio.

Diagnosis of Rheumatic Fever and Like Conditions

Evaluation of Certain of the Acute Phase Reactants in a Single Specimen of Blood

FORREST H. ADAMS, M.D., Los Angeles

MOST PHYSICIANS are readily able to diagnose acute rheumatic fever when it occurs in typical form. In these situations the criteria for establishing the diagnosis recommended by Jones⁴ can be easily applied. It is quite likely, however, that in a significant number of patients the disease is not typically manifested and the criteria of Jones would not be sufficient to establish the diagnosis.

It is the author's opinion that in subtropical climates rheumatic fever infrequently occurs in typical form and is milder in its manifestations.¹ If some of the variations in the manifestations of the disease are represented as a spectrum, it might be stated that there is a shift to the left on the spectrum in the subtropical climates and a shift to the right in the temperate climates. Such a spectrum is illustrated in Chart 1.

It is in those clinical situations where the physician is considering the disease as occurring to the left of the spectrum and where the criteria of Jones are found wanting that special diagnostic aids are most helpful. It is the purpose of this paper to report the results of the performance of a battery of certain of the acute phase reactant tests on the same specimen of blood from patients with various disease states including rheumatic fever. Implications as to the value of such tests in differentiating mild rheumatic fever from other conditions will be discussed.

On each specimen of serum the following determinations were made: Mucoprotein-tyrosine, anti-streptolysin-0 titer, C-reactive protein, and non-glucosamine polysaccharides. The methods and techniques used have been reported elsewhere.³

RESULTS

Normal Infants and Children

Table 1 summarizes the results obtained on the sera from the 76 normal infants and children. The average values were as follows: Mucoprotein-tyrosine, 3.3 mg. per 100 cc., ± 0.5 ; antistreptolysin-0,

• Certain of the acute phase reactant tests were performed on the same specimen of blood from persons with the following states: Normal, acute respiratory disease, streptococcosis, acute rheumatic fever, acute glomerulonephritis, acute rheumatoid arthritis, inactive rheumatic fever, lupus erythematosus, malignant disease, obesity, asthma, and allergic rhinitis. Of the tests performed, the mucoprotein-tyrosine and the anti-streptolysin-0 titer when done together appeared to be the most discriminating. It is suggested that the performance of such tests on the same sample of blood might aid in differentiating mild acute rheumatic fever and acute rheumatoid arthritis from each other and also from other disease states.

55 Todd units ± 55 ; C-reactive protein, 0; non-glucosamine polysaccharides, 116 mg. per 100 cc. ± 14 .

Infants and Children with Various Diseases

Blood was obtained from 128 infants and children with the following various disease states: acute rheumatic fever, acute respiratory disease, streptococcosis, acute glomerulonephritis, acute rheumatoid arthritis, inactive rheumatic fever, lupus erythematosus, malignant disease, obesity, asthma and allergic rhinitis. In the cases of rheumatic fever, the diagnosis was based on the clinical findings and was not contingent upon the results obtained from the acute phase reactants. All the patients with acute glomerulonephritis had hypertension, hematuria, albuminuria and cylindruria. A number of the patients with inactive rheumatic fever were the same as those on whom values were obtained during the acute phase of the disease.

Table 2 contains a summary of the results obtained for the various values in the various disease states. From the data it was obvious that the main difference between acute respiratory disease and streptococcosis so far as these tests were concerned was the increased antistreptolysin titer in streptococcosis. In acute rheumatic fever, *all* the acute phase reactants were elevated and usually greatly so. The same was true of acute glomerulonephritis. In acute rheumatoid arthritis *all* the acute phase reactants are generally elevated except the anti-

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RHEUMATIC FEVER

MILD GENERAL DEBILITY; CARDITIS LATER	TRANSITORY POLYARTHRITIS; CARDITIS LATER	POLYARTHRITIS WITHOUT CARDITIS? CARDITIS LATER	POLYARTHRITIS; CARDITIS; RECOVERY COMPLETE?	POLYARTHRITIS; CARDITIS; RECOVERY WITH CARDITIS	FULMINATING CARDITIS; DEATH
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Chart 1.—Spectrum of manifestations of rheumatic fever.

TABLE 1.—Values for Acute Phase Reactants Found in Apparently Healthy Children

Determination	Number of Persons	Average	Measurement	Minimum	Maximum
Mucoprotein-tyrosine	76	3.3±0.5	mg. per 100 cc.	1.8	4.3
Antistreptolysin-0 titer	67	55±55	Todd Units	0	333
C-reactive protein	76	0	mm. of precipitation	0	2+
Nonglucosamine polysaccharides	75	116±14	mg. per 100 cc.	85	148

TABLE 2

Diagnosis	Number of Patients	Average Age (Years)	Average MPT	Average ASO	Average CRP	Average NGA
Lupus erythematosus.....	4	30	6.2	79	0	166
Malignant disease.....	6	7	7.6	258	4	187
Asthma.....	12	11	4.6	69	0	141
Allergic rhinitis.....	15	9	3.9	84	0	119
Obesity.....	14	13	4.1	86	0	138
Acute respiratory disease of probable nonbacterial origin.....	29	10	4.5	97	0	131
Streptococcosis.....	7	12	4.1	507	2	135
Acute rheumatic fever.....	15	9	7.4	533	3	180
Acute glomerulonephritis.....	7	8	6.4	314	2	184
Acute rheumatoid arthritis.....	6	5	9.5	10	4	208
Inactive rheumatic fever.....	13	10	3.1	98	0	121

Abbreviations: MPT=mucoprotein-tyrosine; ASO=antistreptolysin-0 titer; CRP=C-reactive protein; NGA=nonglucosamine polysaccharides.

streptolysin titer; why this is so is not apparent at present, but certainly this can be helpful in differentiating these two rheumatic diseases for which the prognosis is so different.

In general the acute phase reactant values were normal for the patients with asthma, allergic rhinitis and obesity. In lupus erythematosus the mucoprotein-tyrosine and the nonglucosamine polysaccharides were elevated but the antistreptolysin-0 titer was normal; the serum from only one patient contained C-reactive protein. In malignant disease all the values were regularly elevated except for the antistreptolysin-0 titer.

DISCUSSION

Unfortunately, one of the more commonly used acute phase reactants, the sedimentation rate, was

not determined routinely during this study and its use is not reported here. Previous studies,^{2,5,6} however, showed that sedimentation rate acceleration parallels quite closely the increased serum mucoproteins except in certain unusual situations, namely cardiac failure, nephrotic syndrome and in patients receiving steroid therapy.

The physiological significance of all the acute phase reactants except the antistreptolysin-0 titer still remains obscure. The antistreptolysin-0 titer, of course, is specific for hemolytic streptococcal infection, as it is a measure of the antibody response to the streptococcal antigen, streptolysin.

The author is aware that determinations on a single specimen of serum may not always be sufficient to establish the proper diagnosis. This is particularly true in differentiating prolonged uncomplicated streptococcal disease from mild rheu-

matic fever. In the former situation, all the acute phase reactants might be slightly to moderately elevated, but the duration of the elevation is the differentiating factor. In streptococcal disease the mucoprotein-tyrosine seldom remains elevated longer than 30 days. In patients with clear-cut evidence of rheumatic fever⁶ it was found that the mucoprotein-tyrosine seldom returned to normal sooner than three months after the onset.

From the data presented, it would appear that the C-reactive protein is a substance only remotely related to the mucoprotein-tyrosine and the non-glucosamine polysaccharides. Many patients had elevated values for mucoprotein-tyrosine and non-glucosamine polysaccharides without evidence of C-reactive protein being present, and vice versa. As a result of this observation and certain clinical observations, in the author's experience it would appear that the results of the C-reactive protein determination are less predictable and therefore probably of less value.

The finding of essentially identical results of the acute phase reactants in the sera of patients with acute rheumatic fever and acute glomerulonephritis is not surprising. Epidemiologically, both diseases are thought to be related to infection by the beta hemolytic streptococcus, the main difference being that apparently only certain types of streptococci are nephrogenic whereas all types of strepto-

cocci are thought to be rheumatogenic. Too few observations have been made on patients with uncomplicated Sydenham's chorea to be included in this presentation but certainly a study of reactions in that disease should be done.

It was interesting to note that the major difference between the sera from patients with acute rheumatic fever and acute rheumatoid arthritis was the normal antistreptolysin-O titer in the patients with rheumatoid arthritis. Although both diseases are generally classified as "collagen diseases," this difference suggests etiologic differences.

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Systemic Toxic Reactions to Local Anesthetics

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THE MODERN HISTORY of surface anesthesia probably dates from the introduction of coca leaves in Europe by Scherzer⁸ in 1859—he noted the numbness of the tongue resulting from the chewing of the leaves. With the discovery of cocaine by Niemann in 1860 and of its anesthetic properties by Van Anrep in 1878, the way was paved for the first clinical use of this topical anesthetic agent (by Koller in 1884 in ophthalmology).⁸ The toxicity of cocaine was soon noted and a search for an effective but nontoxic topical anesthetic agent has continued to date.

At the present time, many years later and after much clinical trial, Pontocaine® (tetracaine, Amethocaine®) and cocaine are the most commonly used topical anesthetic agents for anesthetizing the nose, mouth, pharynx, larynx, trachea and bronchi. Recently Xylocaine® (lidocaine) and Cyclaine® (hexylcaine) have been introduced for this purpose but as yet have not gained the popularity of Pontocaine and cocaine.

Although any one physician will not see many toxic reactions (he should review his technique if he does), and some large series of cases are reported with none, the fact remains that systemic reactions following topical administration of anesthetic drugs do occur.^{2,5,6,9,10,14,20,21} Too often the discussion of physicians who use local anesthetic agents in their practice displays a lack of organized thought as to why reactions occur, how they may be prevented and how they should be treated. Therefore, an effort will be made herein to point out: (1) Why severe or fatal systemic toxic reactions to local anesthetic drugs occur more frequently after topical application than after local infiltration or nerve block with these agents; (2) that many of these reactions are due to misuse of the drug and may be prevented by careful prophylactic measures; and (3) how such reactions may be treated successfully.

Pontocaine is the drug to be used as an example in this paper because this drug was employed in most of the recently reported cases in which a fatal or severe systemic toxic reaction followed topical

• The topical use of anesthetic agents involves an element of risk. Systemic toxic reactions are rare, but they do occur and may result in death. When a reaction occurs from a topical application, it usually progresses rapidly to respiratory and cardiovascular collapse, and thus therapy must be instituted with more haste to avoid deaths. Fatal systemic toxic reactions from topically administered anesthetic drugs are, in effect, usually not due to well informed use of the drug but to misuse owing to less than complete understanding of absorption.

Emphasis is placed on the causes, prophylaxis and treatment of severe systemic toxic reactions which follow the topical application of local anesthetic drugs. If systemic toxic reactions resulting from a safe dose of a local anesthetic agent are correctly treated, there will usually follow an uneventful recovery rather than a catastrophe.

application of local anesthetic agents.^{1,3,6,13,20,21} The statements made concerning Pontocaine will apply regardless of the anesthetic agent employed.

PHYSIOLOGICAL BASIS FOR SEVERE FATAL TOXIC REACTIONS

Contrary to common belief, a true allergy (sensitivity, idiosyncrasy, hyper-reactivity) to local anesthetic agents, which results in a severe "anaphylactic-like" reaction and death, is extremely rare, and 98 per cent or more of the systemic toxic reactions which occur reflect a high blood level of the local anesthetic drug.^{11,12} It must be realized that a reaction can be called allergic with certainty only if the patient reacts to an infinitesimal amount of the drug. But such an amount is seldom involved in the topical application of a drug to a mucous membrane. For example, only 1 cc. of 2 per cent Pontocaine contains 20 mg. of Pontocaine and even this amount cannot be termed infinitesimal.

The severity of a high blood level type of reaction depends necessarily on the rate at which the local anesthetic agent is absorbed as well as on the organ or organs which are the first to be supplied by the drug-laden blood and which, therefore, are the first to be exposed to an excessively high concentration of the drug. The rapidity with which the drug is absorbed is usually determined by the regional block method used (topical application, local infiltration, nerve block), as well as by the blood

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supply of the area or organ to be anesthetized. For example, with local infiltration or nerve block of the chest, the abdomen or an extremity, absorption of the drug from the tissues is relatively slow because the tissues *per se* (that is, subcutaneous tissue, muscles, fascial planes), the hyaluronic acid in the subcutaneous tissues and the relatively smaller blood supply of these anatomical structures (as compared to the blood supply of the lung) act as barriers to rapid absorption. Furthermore, it is possible to retard absorption still more by adding epinephrine to the anesthetic solution to be injected into the body tissues. When the local anesthetic agent is absorbed into the blood stream slowly, both its dilution of concentration by the blood and its detoxification by the liver are able to keep pace with absorption of the drug from the tissues. Thus (barrying an inadvertent intravascular injection while performing a local infiltration or a nerve block) seldom does an extremely high blood concentration of the drug reach the heart and brain.

On the other hand, topical application of a local anesthetic agent to the mucous membrane of the respiratory tract does not result in slow absorption of the local anesthetic drug and permits very little dilution and detoxification of the drug before it perfuses the heart and brain. Steinhaus^{7,16} studies of the toxicity of local anesthetic agents in rabbits indicated that the blood level obtained after spraying a local anesthetic agent into the larynx and down the trachea is essentially equivalent to that which would follow the intravenous injection of a similar amount of the drug. This is true because not all the local anesthetic agent remains in the trachea—a substantial part of it is inhaled into the alveoli of the lung. There a single layer of epithelial cells, which forms the lining of the alveoli and separates the alveolar sac from the rich and extensive network of the capillary blood supply of the alveoli, forms practically no barrier to immediate absorption of the drug. This would mean that an extremely high blood level of the local anesthetic drug following such a procedure would reach the heart immediately and, with little dilution or detoxification, be pumped to the brain. In man, the severe toxic reactions which have followed the topical application of local anesthetic agents to the pharynx, larynx and trachea prior to visualization of the respiratory tract, and which have been characterized by sudden fatal respiratory and cardiovascular collapse, would seem to substantiate this observation of Steinhaus.

It is this rapid absorption from the alveoli of the lung that explains why toxic reactions following topical application of local anesthetic drugs to the air passages occur more frequently than when equal or larger amounts of such drugs are used for local infiltration or nerve block.

The following precautions will reduce the incidence of severe systemic toxic reactions from the topical application of local anesthetic drugs.

Evaluation of the Patient. The physical status of the patient is a most important factor in estimating the amount of drug that he will tolerate. A patient with a poor physical status (aged, asthmatic, undernourished, exhausted) tolerates less local anesthetic drug than does a patient of good physical status. In a patient whose physical status is substandard, the total amount of the local anesthetic drug (*i.e.*, the total number of milligrams) must be reduced. In no circumstances should a *routine* amount of drug be used in every case. The dosage must be individualized.

Withholding Foods and Liquids. The patient should have nothing by mouth for six to eight hours prior to the anesthetization. Should a systemic toxic reaction occur, this precaution will reduce the likelihood of vomiting. When vomiting occurs, there is always the danger that the patient may aspirate vomitus.

Premedication. Opiates and barbiturates preoperatively will allay the apprehension which may occur prior to the procedure (such as bronchoscopy, for example). During the procedure, they may reduce the patient's complaining of instrumentation or of awkward position. Premedication will also reduce the incidence of psychomotor reactions and reactions to vasoconstrictor agents.

The relief of these discomforts makes the entire procedure more tolerable to the patient but does not eliminate the hazards of a severe systemic toxic reaction. Since the time of Tatum's and co-workers^{7,18,19} two experiments with animals (1925 and 1926), it has been generally accepted that premedication with barbiturates helps prevent systemic toxic reactions to local anesthetic drugs. However, the authors of the present communication are inclined to believe that barbiturates may do no more than mask early symptoms of a toxic reaction—that the barbiturates may be useful in sedating the patient and reducing the likelihood of apprehension, but that they do not reduce the hazard of a systemic toxic reaction and physicians using them must not feel that by the use of the barbiturates they have eliminated or greatly reduced the likelihood of systemic toxic reactions.

Emergency Equipment and Drugs. It is of the utmost importance that no local anesthetic agent be administered topically unless the following equipment is immediately available: (1) A source of oxygen to which a bag and mask is connected so that a patient in whom the signs and symptoms of a reaction develop may be given oxygen and that

an apneic patient may be given effective artificial respiration with oxygen; (2) oral airways, to establish a patent airway; and, ideally, endotracheal tubes, laryngoscopes and bronchoscopes should also be available; (3) suction for immediate use in the event of emesis by an unconscious patient; (4) intravenous infusion equipment and a bottle of 5 per cent dextrose in distilled water so that a route for administration of drugs intravenously may be established; (5) ampules of vasoconstrictor drugs, such as ephedrine sulfate and Neosynephrine® (phenylephrine) to combat hypotension; and (6) Pentothal® (thiobarbiturate) solution (0.6 per cent to 2.5 per cent) for intravenous injection to control convulsions.

Equally important is the presence of a physician who does not become frantic when a severe systemic reaction results and who is adept at starting an intravenous infusion, establishing a patent airway and manually ventilating the patient with a bag and mask.

Dose of the Local Anesthetic Drug. The least amount of topical anesthetic agent that will supply the required anesthesia should be employed. Often the form (*i.e.*, liquid or crystal) as well as the volume and the concentration in which a local anesthetic drug is packaged is determined by the competitive market price of the drug and a convenient form for use. Drug companies, when packaging a local anesthetic drug for topical use, seldom give consideration to the dosage required by any one patient; the dosage is left to the physician who is to use the drug and, unfortunately, he may have little knowledge of the drug's pharmacologic properties and may not take the time to read the instructions for its use.

The mere fact that a drug comes in a convenient, economical form for use does not warrant its use haphazardly as if it were drinking water. The maximum safe dosage of the drug should not be exceeded. For example, Pontocaine for topical administration is sold only in a 2 per cent solution in a 4 oz. (118 cc.) bottle and most of the fatal systemic toxic reactions that have been reported recently occurred from the use of excessive volumes of this concentration. Usually, the deaths in these instances have been attributed to allergic reaction to the drug. Yet in many of the reports the total amount of the drug employed is not recorded, or only the approximate amount stated. The drug, in many of these cases, was sprayed from an atomizer and the amount put into the reservoir of the atomizer was not measured. The reservoir of the De Vilbiss atomizer (No. 27) holds 20 cc. of solution. It is the opinion of the authors of this article that in the greater majority of these cases a concentration and volume of Pontocaine must have

been employed which was excessive for the individual being anesthetized and that the death was a result of an excessively high blood level of the drug from an overdose, not a result of allergic reaction. It must be borne in mind that a reaction can be termed allergic with certainty only if infinitesimal amounts of the drug were administered.

Certainly 4 to 5 cc. of a 2 per cent Pontocaine solution, *i.e.*, 80 to 100 mg., cannot be considered anything but overdose when the drug has been used in the respiratory tree, where absorption is so rapid that the subsequent blood level of the drug approximates that of an intravenous injection. Therefore, a physician determining the dosage must think in terms of milligrams of Pontocaine to be used (2 per cent solution contains 20 mg. per centimeter): Literature in the package warns that "for anesthetizing the larynx, trachea or esophagus, the total absorbed dose of Pontocaine should not exceed 20 mg. (0.02 gm.) except in special techniques which have been carefully worked out." Furthermore, it advises using 0.25 per cent or 0.5 per cent solution for anesthetizing the larynx and trachea. Carabelli² reported a technique using 8 cc. of 0.25 per cent solution (20 mg.) which produces satisfactory anesthesia for bronchoscopy and bronchography, and Rubin and Kully¹⁴ advocated the use of a technique for these procedures in which 0.5 per cent is employed and 50 mg. of Pontocaine is not exceeded. It can well be reemphasized that if Pontocaine is sprayed into the respiratory tree, probably two-thirds of it, or more, is immediately absorbed by the circulating blood. Hence, if 5 cc. of 2 per cent Pontocaine is used, *i.e.*, 100 mg., then probably upward of 65 mg. is immediately absorbed into the blood and pumped directly to the heart and brain.

The authors' clinical experience in topically anesthetizing the larynx and trachea of 5,000 awake patients prior to endotracheal intubation indicates the 40 mg. of Pontocaine (2 cc. of a 2 per cent solution) may safely be used for this procedure in most patients without provoking any form of systemic toxic reaction, and yet produce satisfactory anesthesia. However, the 2 per cent solution must be diluted to a 0.5 to 0.25 per cent solution and 3 to 4 cc. of the solution may then be used to anesthetize the mouth, pharynx and vocal cords, and an additional 3 cc. may be used to anesthetize the trachea. At no one time should more than 3 cc., even of these weak concentrations, be administered directly into the trachea. If it is necessary to apply an additional 3 cc. to the trachea to effect anesthesia, five minutes must first be allowed to elapse. This waiting period permits detoxification by the liver of that part of the previous tracheal dose which was inhaled into the alveoli and rapidly absorbed into the circulating blood.

Consequently, if Pontocaine were to be packaged so that only a *single* relatively safe dosage were available for application in one bottle, this bottle would contain not more than 8 cc. of a 0.5 per cent solution—a total of 40 mg. of Pontocaine. Cost probably renders such a packaging prohibitive. Therefore, realizing that Pontocaine is a rapidly effective topical anesthetic in a concentration of 0.25 to 0.5 per cent (onset in five minutes), and that for topical application it is available only in a bottle containing 4 oz. (118 cc.) of a 2 per cent concentration, the physician should pour 2 cc. of this solution into a graduate measuring cup and dilute it with at least 6 cc. of normal saline solution. This would result in 8 cc. of a 0.5 per cent solution, 40 mg. being available for use. If a larger volume of solution is needed, then more normal saline solution, not Pontocaine, may be added; 14 cc. of normal saline solution added to 2 cc. of 2 per cent Pontocaine (40 mg.) gives 16 cc. of 0.25 per cent solution. Seldom is it necessary to exceed these amounts or concentrations of Pontocaine to obtain satisfactory anesthesia of the pharynx, larynx, trachea and bronchi.

Use of Vasoconstrictor Drugs. Some physicians add 0.10 to 0.25 cc. of epinephrine 1:1000 to the measured amount of local anesthetic solution to be applied to the mucous membrane. But it is debatable whether this is useful in either retarding absorption of the local anesthetic drug or in prolonging anesthesia. Steinhaus¹⁶ indicated it is not; Kelsall⁷ expressed belief it is. Probably it is permissible to employ this amount of epinephrine, since it is easily measured with a small syringe and is not likely to produce an "epinephrine-like" reaction.

SIGNS AND SYMPTOMS OF A SEVERE SYSTEMIC TOXIC REACTION

A systemic toxic reaction to a local anesthetic drug usually starts with the patient complaining of a faint, giddy feeling or the sensation of "blacking-out." His speech becomes incoherent and irrational, and unconsciousness and apnea ensue. Twitching of the fingers may follow, which often rapidly develops into generalized convulsions. Vomiting, with or without aspiration, may occur. Untreated, the patient may convulse two or three more times, get progressively worse and die. Usually, these signs and symptoms following topical application of a local anesthetic agent progress more rapidly than when they result from a regional nerve block procedure.

Muscular twitchings and convulsions, as well as vomiting, are usually attributed to overstimulation of the brain by a high concentration of the local

anesthetic agent.⁴ Respiratory and cardiovascular collapse are usually attributed to depression of the respiratory and cardiovascular centers in the medulla which follows their overstimulation.⁴

TREATMENT OF A SEVERE SYSTEMIC TOXIC REACTION

Every physician using local anesthetic drugs should have a well thought out and orderly step by step routine of treating toxic reactions to local anesthetic drugs. He must not become frantic and haphazardly inject anaesthetics, drugs and barbiturates, for that would hasten the death of the patient.

Time is of the essence and therapy must be instituted immediately at the first sign of a reaction; otherwise, circulatory collapse and death follow in a few minutes. No patient should be allowed to undergo even an early symptom of a toxic reaction without treatment, for a few simple measures will usually control the reaction and bring about uneventful recovery. In treating a systemic toxic reaction, the aim is to protect the patient from hypoxia or anoxia, hypotension and cardiac failure until the anesthetic agent is detoxified. When detoxification has occurred, recovery without complications may be expected.

Administer Oxygen Via a Patent Airway. The authors have noted that depressed respiration or apnea usually precedes cardiovascular collapse and death when a systemic toxic reaction occurs. This is singularly true when Pontocaine is the responsible drug. Therefore, at the first sign of a reaction, it has become our custom to give oxygen by bag and mask immediately. The patient's respirations should be assisted if depressed; and if respiration stops, artificial respiration by rhythmical squeezing of the bag must be instituted. An effective exchange, evidenced by expansion of the chest and upper abdomen, at the easy rate of about 24 breaths per minute is usually satisfactory.

An oral airway may be needed to effect a free airway and if a patent airway cannot be maintained in this way, the placement of an endotracheal tube should be considered. If the patient vomits—and this is not an infrequent occurrence if the patient has not had preoperative preparation—the vomitus must be cleared from the pharynx, larynx and trachea before oxygen is given, since giving oxygen under pressure tends to push the vomitus deeper into the bronchi and alveoli. If the patient is unconscious and cannot clear his own airway, it must be done for him by suction and, on occasion, by bronchoscopy.

The authors have successfully treated severe systemic toxic reactions to local anesthetic drugs, including those which have progressed to convulsions, with oxygen therapy and artificial respiration alone.

This seems to indicate that the effective administration of oxygen alone will probably avert circulatory collapse and subsequent death in most cases. The experiments in animals by Tainter and Thronson¹⁷ support this view. They showed that effective oxygen administration, including artificial respiration if apnea occurs, will allow animals to tolerate up to ten times the ordinary minimal lethal dosage of a local anesthetic drug.

It must be borne in mind that during a generalized convulsion manual ventilation is not effective because the larynx and bronchi are in spasm. At such times one should avoid extreme positive pressures on the oxygen bag lest the oxygen be forced down the esophagus and inflate the stomach. As soon as the convulsion subsides, manual respiration will be easy again.

Start Intravenous Fluids and Correct Hypotension. While the physician carries out respiration, an assistant should start an intravenous infusion of 5 per cent dextrose in distilled water. If there is pronounced decrease in blood pressure, a nearly normal blood pressure should be established by the rapid intravenous administration of: (1) 15 to 25 mg. of ephedrine sulfate—this dosage may be repeated at 2 to 5 minute intervals as necessary; or (2) an intravenous drip of Neosynephrine consisting of 1 cc. of a 1 per cent solution of this drug (*i.e.*, 10 mg.) added to 1,000 cc. of 5 per cent glucose in distilled water—this mixture is dripped at the rate of 100 to 180 drops per minute until the blood pressure approaches normal and then it is slowed to a drip that will maintain this blood pressure until the reaction has passed.

Stop Convulsions. If, after one or two general convulsions, it appears that adequate oxygenation of the patient alone does not effectively prevent further convulsions, then and only then, Pentothal (0.6 per cent drip or 2.5 per cent solution) should be given intravenously, sparingly, to control the convulsions. Doses of 50 to 100 mg., which are usually sufficient to reduce the severity of or control the convulsions, will probably suffice. It is seldom necessary to exceed a total dosage of 100 to 300 mg. of Pentothal. Too much Pentothal will add to the respiratory depression which will follow convulsions.

The period of apnea and unconsciousness will depend on the rate of recovery of the vital centers of the medulla, and this in turn depends to a great extent on the rate of detoxification of the local anesthetic drug, as well as on the amount of Pentothal or other depressant drug used. It may be necessary to promote breathing by manual pressure for up to 30 minutes, at which time the patient should return to consciousness and complete recovery.

Do Not Give Analeptics. Analeptics — such as caffeine and Metrazol® (pentamethylenetetrazol) — are contraindicated as they increase the oxygen demand of cells and may accentuate the depression which will follow overstimulation.¹⁵

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Stress Incontinence in Women

Treatment by Retropubic Urethrovesical Suspension

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IF A WOMAN unconsciously leaks urine while coughing or sneezing she has stress incontinence. This must be carefully distinguished from the uncontrollable desire to void of *urgency* incontinence, and from the constant dribbling of fistulous or *overflow* incontinence. Each variety of incontinence requires a specifically different treatment, and the commonest cause for failure of operative cures is faulty diagnosis.

Stress incontinence is typically a disease of parous, postmenopausal women, but its incidence in this group is unknown. About 5 per cent of nulliparous¹⁶ or recently parous⁵ women admit to this embarrassing symptom.

Recent roentgenologic studies demonstrated the relationship between normal micturition and stress incontinence. During micturition, the upper urethra dilates, descends, and rotates posteriorly so that the posterior urethral wall aligns with the base of the bladder (Figure 1). Voluntary traction of the pubococcygeus and the striated peri-urethral muscles constrict, elevate and rotate the urethra to its original position, and the flow of urine is cut off (Figure 1). Continence is maintained by the smooth muscle tonus of the urethra and by the equalized pressure within the vesical spheroid. In patients with stress incontinence, the urethra is chronically dilated and posteriorly rotated, so that any sudden rise in intravesical pressure is transmitted to the cone-shaped neck of the bladder and urine is ejected with hydraulic ram-like force through the lower urethra. The critical pathologic changes of stress incontinence are intrinsic to the bladder neck and upper urethra, and are not related to the competence of the pelvic supporting structures. It is not paradoxical, therefore, that some patients with good vaginal support may be incontinent, while others, despite complete prolapse of the uterus and bladder, remain dry.

Cure of stress incontinence requires elevation, anterior rotation, and constriction of the upper urethra. Perineal exercises can do this, and excellent

• Twenty-four retropubic urethrovesical suspension operations were performed in a five-year period. Twenty-one of the patients were satisfied with the results, although the objective success of the operation did not always correlate with subjective relief of symptoms. The commonest *apparent* cause for failure was the coincidence of urgency with stress incontinence, and the few *true failures*, due to secondary relaxation of the paraurethral supports, were often mitigated by compensatory learning on the part of the patients, many of whom remain blissfully unaware of the underlying weakness.

The retropubic urethrovesical suspension operation is simple, effective, and free of complications. It is indicated as a primary procedure whenever a vaginal operation has failed to cure (or, worse, has caused) stress incontinence. It is advised as a complementary procedure for women with a secondary complaint of stress incontinence who must undergo laparotomy for other cause.

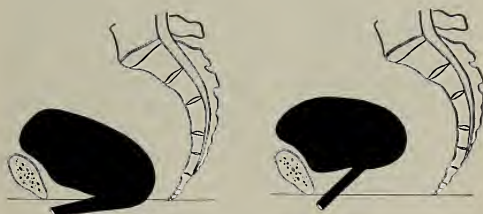


Figure 1.—Left: During micturition the upper urethra dilates, descends and rotates posteriorly so that the posterior urethral wall aligns with the base of the bladder; then (right), voluntary traction of the pubococcygeus and the striated periurethral muscles constrict, elevate and rotate the urethra to its original position and the flow of urine is cut off.

results are obtained by those incontinent patients who, having at least fair musculofascial bladder support, can learn to contract the levator ani muscles. When the pelvic support is poor, plastic vaginal repair and suburethral plication are indicated, and results are good in about 85 per cent of cases. For the incontinent patient with good support who does not respond to perineal exercises, for the remaining 15 per cent of patients in whom vaginal plastic operations have failed, and for incontinent patients in whom laparotomy is indicated for co-incontinent disease, suprapubic urethrovesical suspension is the procedure of choice.

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HISTORICAL BACKGROUND

This operation has an interesting history. In cases in which suburethral plication did not cure stress incontinence, Bonney² sutured the anterior wall of the bladder to the back of the rectus muscle. Hepburn⁸ used the same technique to elevate the prolapsed urethra. Furniss⁴ plicated the urethra from above and suspended it by anchoring one of the plicating suture ends to the rectus muscle. In 1942, Williams²³ sutured the side of the bladder and the underlying fascia along the top of the symphysis, and he reported nine such operations in 1947. With the intention of exaggerating the urethrovaginal angle for the cure of stress incontinence, Perrin¹⁸ sutured the paraurethral fascia and the bladder neck to the back of the symphysis and to the abdominal fascia. He performed the first operation in March, 1944, and reported two cases in 1945. A similar operation was performed in the United States in June, 1944, and the result of 38 such operations for stress incontinence in women was reported by Marshall, Marchetti and Krantz¹³ in 1949. The name Marshall-Marchetti is commonly applied to this operation in the United States, but since the historic origin is complex, since the omission of Krantz's name seems unjustified, and since descriptive terms are generally preferred to autonyms, the author prefers *retropubic urethrovaginal suspension* despite its voluble qualities. Table 1 summarizes published experiences with this operation. Mulvany¹⁴ expressed belief that retropubic dissection alone, rather than the suspending sutures, is the curative factor, while Ball¹ reported he got best results by combining vaginal plication with retropubic suspension. Neither of these modifications has as yet been extensively tried.

MATERIAL AND METHODS

In the five-year period 1951-1955, the retropubic suspension operation was performed on 24 women with stress incontinence. Nineteen were clinic patients and five were private patients. In 12 patients whose primary complaint was stress incontinence, only the suspension operation was performed. In 12 other patients undergoing intraperitoneal procedures, urinary incontinence was a secondary complaint. The primary and secondary groups differed in important ways (Tables 2 and 3). The secondary operations were performed because of increasing familiarity with and pleasing results of the primary operations. Besides this, the degree of incontinence was less, the patients were younger, and the operations were more recent in the secondary as compared with the primary group.

Three patients were nulliparous, but had neither spina bifida nor neurologic disease. A fourth had

TABLE 1.—Published Data by Various Investigators on Results of Retropubic Urethrovaginal Suspension

Author	Year	Cured	Improved	Failed	Total
Perrin ¹⁸	1945	2	....	....	2
Labry ¹¹	1948	8	3	1	12
Marshall ¹³	1949	28	7	3	38
Marchetti ¹²	1949	12	....	....	12
Pieghdal ¹⁹	1949	4	....	1	5
Gillam ⁷	1952	19	....	1	20
Doolittle ⁹	1952	5	....	1	6
Gallagher ⁵	1952	10	....	1	11
Ullery ²⁰	1953	22	1	1	24
Paxon ¹⁷	1953	4	....	....	4
Ward ²¹	1953	6	....	....	6
Nelson ¹⁵	1953	34	4	2	40
Käser ¹⁰	1953	12	4	....	16
Jeffcoate ⁶	1954	18	....	3	22*
Weinberg ²²	1955	22	4	1	33*

* Includes patients lost to follow-up.

TABLE 2.—Results in Cases in Which Urethrovaginal Suspension Was Done as a Primary Procedure

Month and Year	Age (Yrs.)	Follow-up (Mos.)	Subjective			Objective	
			Failed	Improved	Cured	Failed	Cured
3-51	67	66	....	X	....	X	....
4-51	41	36	....	X	....	X	....
6-52	75	22	X	....	....	....	X
7-52	61	23	X	....	....	....	X
8-52	69	22	....	....	X	X	....
8-52	65	22	....	....	X	X	....
1-53	57	21	....	....	X	....	X
7-53	74	11	....	....	X	X	....
11-53	42	8	....	....	X	....	X
11-53	35	2	....	....	X	....	X
6-54	41	12	....	....	X	....	....
10-54	67	12	....	....	X	....	X

TABLE 3.—Results in Cases in Which Urethrovaginal Suspension for Incontinence Was Secondary to Another Intraperitoneal Procedure

Month and Year	Age (Yrs.)	Follow-up (Mos.)	Subjective			Objective	
			Failed	Improved	Cured	Failed	Cured
3-51	45	40	....	X	....	X	....
7-52	42	24	....	....	X	....	X
12-53	64	24	X	....	....	X	....
1-54	51	10	....	....	X	....	....
2-54	50	7	....	....	X	....	X
2-54	50	10	....	X	....	....	X
4-54	43	6	....	....	X	....	X
11-54	47	4	....	....	X	....	X
3-54	43	4	....	....	X	....	X
2-55	47	9	....	X	....	....	X
3-55	44	4	....	....	X	....	X
8-55	65	3	....	....	X	....	X

a huge anterior meningocele with both overflow and stress incontinence. Bladder support was normal in all patients, 12 having undergone previous vaginal repairs. Seven patients had been incontinent for ten years or more, and in 15 others the symptoms had lasted more than five years. In ten patients, urgency complicated the stress incontinence, one had infected urine, and in six mild trigonitis was noted on cystoscopic examination.

Urologic consultation and treatment were given to fifteen patients preoperatively. Perineal exercises were tried in only five. Local estrogens were given to five patients and antibiotics to four with no apparent benefit.

A test similar to that advocated by Bonney was performed preoperatively in all patients. With the patient standing, an open curved clamp was held against the anterior wall of the vagina in such a way that the urethra was held against the back of the symphysis without compression. Inhibition of incontinence on cough during this test was a prerequisite to the suspension operation.

Marchetti's¹² operating technique was employed. For the first ten operations chromic catgut was used, but later this was replaced by nonabsorbable material in the hope that the support would be more lasting. After nine successful operations a cotton suture was inadvertently stitched through the bladder wall, causing persistent postoperative cystitis until it was removed. A low transverse abdominal incision is preferred for this operation. Drains are used only for the rare oozing incisions, and retention catheters may be removed within 24 hours. Six patients required a few subsequent catheterizations.

RESULTS

All 24 patients responded to a detailed questionnaire concerning symptomatic improvement. In addition, 16 patients returned for a special postoperative recheck, at which time residual urine was examined for volume and for sediment, the bladder capacity was determined, and with the bladder still full, the patient was tested for incontinence in a standing position on coughing and straining. Subjective responses are compared with objective testing in Table 2. Patients were deemed subjectively improved when, following operations, they could resume normal activities without perineal pad protection, even though occasional stress incontinence might have recurred. No such intermediate results could be distinguished on objective testing, since the patients either leaked or remained dry. The improvement in results of the early as compared with the later operations is more apparent than real. As indications for the operation were broadened, younger patients with less severe, less chronic incontinence were included. The period of followup is shorter and the proportion of secondary cases is greater in the later than in the earlier cases. On the other hand, the later patients were better selected and the operations were perhaps technically superior to the earlier.

No patient was made worse by this operation, a distinction not shared by the vaginal approach. Seven operations were objective failures, yet six of

the patients considered themselves symptomatically cured or greatly improved. Bladder neck and urethral support remained good or fair in all but one of the seven patients. Contrariwise, two patients felt the operation was a complete failure, and two were only improved, yet all four were dry on test. In five cases the success amounted to a therapeutic triumph, in that incontinence was a disabling complaint, previous treatment had failed, and after the operation the patient was cured. In five patients the operation neatly supplemented a major intraperitoneal operation, obviating the fatigue and inefficiency of the combined abdominal and vaginal approach and cured an important secondary complaint. Thus, ten of the 24 operations were entirely satisfactory in outcome subjectively and objectively, and 21 of the 24 patients were well satisfied with the result.

DISCUSSION

Considering the unusually difficult problems presented by this small group of patients, the results were remarkably good with this simple, physiological procedure. It is no longer necessary to follow blindly the try-and-try-again approach from below; in fact, more than one such vaginal approach is no longer indicated for stress incontinence. No operations of sling type were performed in the period reported upon, because the few patients who still had stress incontinence following the suspension operation were so improved they considered further operation unnecessary. Three patients were cured of stress incontinence, yet they were dissatisfied with the suspension operation because urgency incontinence remained to spoil the effect. In reviewing the histories in those three cases, the presence of urgency was noted in addition to stress incontinence in each, and, no doubt, had the patient been carefully educated as to the difference, she would have been more appreciative of the partial cure. The suspension operation is by no means contraindicated in patients with stress incontinence who also suffer from urgency. Both should be treated in the most effective manner.

The apparent paradox of the patient who believes herself cured, although stress incontinence remains on test, can best be explained by assuming that she has learned to empty her bladder before its functional capacity is exceeded. In four of the seven patients in whom incontinence recurred, some return of bladder neck relaxation was noted, and the Bonney test corrected the incontinence again.

Exercises have been advised, and although they are of some help, few of the older women are highly enough motivated, or have the persistence, to obtain really curative results with exercises alone. For the partial operative success, exercises are a worthwhile supplement.

The operation is so free of complications it is an excellent addition to other abdominal procedures, and perhaps serious stress incontinence can be entirely prevented in those women who undergo abdominal operations if the surgeon remembers to take a careful history, uses the Bonney test liberally, and spends the additional few moments necessary to suspend the urethra.

Because of the variety of ways of reporting it is difficult to compare the results reported here with those of other clinics. Reports which do not differentiate subjective from objective results cannot give a true picture of the benefits and weaknesses of this operation.

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Poliomyelitis Vaccine

Epidemiologic Observations on the Safety and Effectiveness in California in 1955

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DURING THE PAST YEAR, the California State Department of Public Health has participated in a nationwide study of poliomyelitis under the central coordination of the Poliomyelitis Surveillance Unit of the United States Public Health Service's Communicable Disease Center at Atlanta, Georgia. The major objective of this study has been to make a field evaluation of the safety and effectiveness of poliomyelitis vaccine based upon epidemiologic observations on the occurrence of the disease and with a particular effort to compare the experience of vaccinated and nonvaccinated children. Since a summary of some of the essential findings reported from California and other participating states has been published at the national level,^{1,3} the intent of this report is to review in greater detail California's experience with the Salk vaccine during the past year.

Although the observations from California alone are based upon much smaller numbers than the combined national study populations, the validity of the findings is supported by the remarkable similarity they bear to results reported from other states, notably New York and Massachusetts,^{3,4} in which comparable studies have been conducted independently.

Through the collaboration of local health officers, private physicians and hospital staff personnel, an intensive effort has been made to obtain a prompt report of every recognized case of poliomyelitis occurring in the state. The initial case report is then confirmed by a more detailed clinical and epidemiologic history which includes the vaccination record of the patient and family. In light of the fact this report was prepared shortly after the close of the 1955 disease year, which ended on March 31, 1956, these data must be considered as provisional. It is improbable, however, that delayed reports or late revisions in diagnostic classification will significantly alter the figures given.

- During the past year California has participated with other states in a nationwide field evaluation of the safety and effectiveness of poliomyelitis vaccine. Among 227,000 children who received Cutter vaccine, and the household contacts of these children, the incidence of poliomyelitis was higher during the early postvaccinal period than in comparable age groups of the population at large. Among 238,000 children who received poliomyelitis vaccine made by other manufacturers early in 1955 no increase in poliomyelitis was observed in the inoculated children or their household contacts.

Subsequent observation on over 500,000 additional children vaccinated in California alone since September 1955 with vaccine that was made under revised safety standards has uncovered no evidence of unsafe vaccine. In children who received a single inoculation of vaccine prior to the onset of the poliomyelitis season in 1955 the incidence of paralytic poliomyelitis was about 60 per cent less than in unvaccinated children. Among those who received two inoculations an 85 per cent reduction was observed. The average reduction in paralytic poliomyelitis for the entire vaccinated group was approximately 75 per cent. Data thus far on children vaccinated since September 1955 with poliomyelitis vaccine made by methods now approved indicate that a similar overall effectiveness is still being maintained.

VACCINE SAFETY

The events leading up to the release of the Salk poliomyelitis vaccine on April 12, 1955, and the period of confusion which ensued in late April and May following the occurrence of cases of poliomyelitis associated with Cutter vaccine, are now generally familiar to most physicians.⁶ A detailed report of California's experience during this period is being prepared for publication elsewhere but brief reference to this early experience will serve as background for subsequent observations of vaccine safety.

The occurrence of cases of poliomyelitis with onset 30 days or less after inoculation is summarized in Table 1. Between April 12 and April 27, when the Cutter vaccine was withdrawn, an estimated 227,000 persons, ranging in age from less than one year to over 20 years, received one or more inoculations of this vaccine. The great major-

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TABLE 1.—Cases of Poliomyelitis With Onset 30 Days or Less After Vaccination Compared with Incidence Among Nonvaccinated Children (California, 1955-1956)

Vaccination Group	Estimated Number of Children	Cases			Rate per 100,000			Children Per Paralytic Case
		Total	Paralytic	Nonparalytic	Total	Paralytic	Nonparalytic	
April 12 to June 15:								
Cutter vaccine, age 5 to 9.....	189,000	19	12	7	10.1	6.3	3.7	15,750
Other vaccines,* age 5 to 9....	225,000	7	5	2	3.1	2.2	0.9	45,000
Nonvaccinated,† age 5 to 9.....	970,000	46	26	20	4.7	2.7	2.1	37,300
September 1 to February 29:								
All vaccines, age 0 to 14.....	547,000	13	7	6	2.4	1.3	1.1	78,100
Nonvaccinated,† age 0 to 14....	2,960,000	111	73	38	3.8	2.5	1.3	40,500

* Other vaccines include Lilly, Parke-Davis and Pitman-Moore.

† Nonvaccinated cases and rates are based upon average 30 day incidence during the period indicated.

ity, approximately 189,000, were children within the 5 to 9 year age group who received inoculations chiefly in school programs sponsored by the National Foundation for Infantile Paralysis. The experience of these children can be compared with the experience of those who received vaccine of other manufacturers and with that of nonvaccinated children of similar age.

By June 15, when first inoculations in the school program were essentially completed, approximately 225,000 children had received one or more inoculations of Lilly or Parke-Davis vaccine—leaving some 970,000 children uninoculated in the 5 to 9 age group in California.

Among the 189,000 children aged 5 to 9, inoculated with Cutter vaccine, there were 19 cases, 12 of which were paralytic, giving an attack rate of 10.1 per 100,000 for all cases and of 6.3 for the paralytic cases. Expressed another way, the incidence was one case of paralytic poliomyelitis for each 15,750 children in this Cutter-vaccinated group. Among the 225,000 children receiving Lilly or Parke-Davis vaccines, there were seven cases, five of them paralytic, giving a paralytic rate of 2.2 per 100,000, or approximately one paralytic case for each 45,000 children inoculated.

For comparison with these two vaccinated groups the average 30-day incidence of poliomyelitis among the nonvaccinated children during these same months is shown in Table 1. The incidence in the nonvaccinated group was fairly stable during this period of the season, averaging 2.7 for paralytic cases or approximately one paralytic case per 37,000 children. It is apparent that the children receiving Cutter vaccine experienced rates for paralytic poliomyelitis approximately two and a half times greater than those of the nonvaccinated group; whereas, the experience of the children inoculated with Lilly and Parke-Davis vaccine was essentially the same as that of the nonvaccinated group. Although the incidence rate for the Cutter-vaccinated children is not exorbitantly high for poliomyelitis in California and might well be exceeded during the peak months

of an average poliomyelitis season, this incidence, coming at the low point of the season, is unusual and may be contrasted to the experience during this same period of children who received other vaccines or who were not vaccinated.

From mid-June until early September 1955, very few new inoculations were given and there was, therefore, little opportunity to make additional observations on the safety of the vaccine in California. No new commercial supply of vaccine was released in the state until early September. The few inoculations given during the summer were limited almost entirely to additional second inoculations for children in the school program.

Although all the vaccine distributed in California since September has been released under revised safety testing standards issued May 26, 1955, a continuing system of alert has been maintained to observe vaccine safety. A record of all vaccinated persons by vaccine manufacturer and lot number is maintained by the State Department of Public Health and the information in each case is forwarded immediately to the National Surveillance Unit to be checked against the experience from other states in which the same vaccine is used.

The occurrence of cases with onset 30 days or less after inoculation, among an estimated 547,000 children 0 to 14 years of age who have received only vaccine released since last September, is also shown in Table 1. This estimate of vaccinated children is based upon actual reports of first inoculations made by local health officers and by other physicians. No correction has been made for deficient reporting of inoculations by physicians using the so-called commercial vaccine.* This estimate is quite conservative and therefore tends to magnify the incidence rates in this group. Among these children there have been 13 cases, seven paralytic and six nonparalytic, giving a paralytic rate of 1.3 per 100,000 or one paralytic case for each 78,000 inoculated children.

* Available through regular trade channels rather than from supplies allotted through public health organizations.

TABLE 2.—Cases of Poliomyelitis With Onset 30 Days or Less After Inoculation Among Children Vaccinated Since September 1, 1955 (California, September 1, 1955 to February 29, 1956)

Month	Estimated Population 0 to 14 Year Age Group		Total Cases		Rate per 100,000		Children per Case	
	Vaccinated	Non- Vaccinated	Vaccinated	Non- vaccinated	Vaccinated	Non- vaccinated	Vaccinated	Non- vaccinated
September.....	11,000	3,156,000	1	182	9.0	5.8	11,000	17,341
October.....	28,100	3,128,000	2	147	7.1	4.7	14,050	21,279
November.....	50,000	3,078,000	2	116	4.0	3.8	25,000	26,534
December.....	63,500	3,014,000	2	96	3.1	3.2	31,750	31,396
January.....	211,600	2,792,000	3	72	1.4	2.6	70,533	38,778
February.....	182,800	2,609,000	3	57	1.6	2.2	60,933	45,772

TABLE 3.—Interval from Inoculation to Onset of Illness—Cases of Poliomyelitis With Onset 30 Days or Less After Vaccination (California, 1955-1956)

Interval in Days	Vaccinated Prior to June 15, 1955				Vaccinated After September 1, 1955	
	Cutter (227,000 Children)		Parke-Davis, Lilly or Pitman-Moore (238,000 Children)		All Vaccines (547,000 Children)	
	Total	Paralytic	Total	Paralytic	Total	Paralytic
Total 0 to 30.....	35	27	7	5	13	7
0 to 1.....	2	....	....	....	2	....
2 to 3.....	1	....	2	2	....	....
4 to 5.....	7	7	1	....	3	3
6 to 7.....	11	10	....	....	....	....
8 to 9.....	8	7	....	....	1	....
10 to 11.....	2	2	1	1	2	1
12 to 13.....	2	1	....	....	2	1
14 to 17.....	1	....	....	....	....	....
18 to 21.....	1	....	1	1	2	1
22 to 25.....	....	....	2	1	....	....
26 to 30.....	....	....	....	....	1	1

To compare with this inoculated group, the average 30-day incidence of poliomyelitis among the nonvaccinated children 0 to 14 years of age during the same period is also shown in Table 1. This group of nearly three million children had a paralytic rate of 2.5 per 100,000 or one paralytic case for each 40,500 children in the group.

It is apparent that, in any endemic area in which inoculations are given, some cases may be expected to occur coincidentally among recently vaccinated children. Until sufficient time has elapsed for the vaccine to exert some protective effect, it is reasonable to expect about the same incidence of poliomyelitis among the newly vaccinated as in non-vaccinated individuals of similar age.

For a more precise comparison of the vaccinated and nonvaccinated children since last September, a month-by-month breakdown of the cases in each group is shown in Table 2. If the vaccine were giving rise to cases of poliomyelitis, then the number of cases occurring shortly after vaccination should increase each month in proportion to the increasing number of inoculations. It may be seen, however, that as the number of inoculations increased from the 11,000 reported in September to about 200,000 per month in January and February, there was not a proportionate increase in cases among these recently vaccinated children.

A single case occurring among the 11,000 chil-

dren vaccinated in September and two cases occurring in the group vaccinated in October gave slightly higher rates for the vaccinated children for these two months. As the size of the vaccinated population increased and the rates became statistically more meaningful, there was a continuous decline in the incidence rate among the vaccinated which closely paralleled the decline in rate among the nonvaccinated. This same trend was also shown by the ratio of well children per observed case in each group—vaccinated and nonvaccinated. During January and February only one case of poliomyelitis was observed within 30 days of first injection for each 60,000 to 70,000 inoculated children, while cases among the nonvaccinated in this same age group were occurring at the rate of approximately one case per 40,000 children. In summary, other than the experience with Cutter vaccine, no evidence has been detected in California that the number of cases occurring among recently vaccinated children is in excess of the number expected to occur by chance alone.

Another useful index of vaccine safety is provided by observation of the interval from inoculation to onset of illness among vaccinated persons. In Table 3, this interval is shown for cases occurring up to 30 days after inoculation among three groups of vaccinated children in California. Among 227,000 persons, including a few adults, who re-

ceived Cutter vaccine, 35 cases occurred within the 30-day postvaccinal period. There was fairly concentrated clustering of these cases: they began 4 to 5 days after inoculation and reached a peak at 6 to 7 days, with no cases at all after the 21st day. This clustering was most prominent for the paralytic cases, all of which had onset within a period of 4 to 14 days after inoculation. Of some 238,000 children who received Parke-Davis, Lilly, or Pitman-Moore vaccine, there were seven cases, of which five were paralytic. Only one of the paralytic cases fell within the 4 to 14-day interval. Similarly, the intervals of the 13 cases among 547,000 children inoculated only with vaccine released since last September showed no evident grouping within the 30-day period.

Another index for observing vaccine safety is provided by observations on correlation of site of first paralysis with the site of inoculation among cases occurring shortly after vaccination. Data on this point are summarized briefly in Table 4. The same groups of vaccinated children as in the previous table are again shown. Among the Cutter-vaccinated group there were 27 paralytic cases, in 23 of which the first paralysis was in the inoculated extremity. Among children receiving other vaccines early last year, there were five paralytic cases—in one of which the first paralysis was in the inoculated extremity. In none of the paralytic cases observed among children first inoculated since last

September did the first paralysis occur in the inoculated extremity.

Finally, in considering vaccine safety, careful study had been made during the past year of the occurrence of poliomyelitis among persons who were not themselves vaccinated but who were known to have had close contact with a vaccinated child. Experience with Cutter vaccine clearly demonstrated that, if a vaccine contains infectious amounts of live virus, some of the inoculated persons will develop a "full-blown" case of paralytic poliomyelitis. Others, apparently having some degree of previous immunity, will have no recognizable clinical illness but will have a "silent infection" which serves to spread the virus to their associates, in some of whom a clinical case of poliomyelitis may develop.

Although by laboratory tests all vaccine released since last May has been free of any demonstrable infectious virus, some observers have expressed concern that the vaccine might still contain minute quantities of undetected live virus which might give rise to unrecognized infections and thereby create an added risk of infection to the persons in close contact with vaccinated children.

In an ultimate sense, investigation of this hypothesis would require extensive and carefully controlled laboratory studies comparing the virus excretion pattern of vaccinated and nonvaccinated persons. In a practical sense, however, if persons in known close association with recently vaccinated children have no greater incidence of poliomyelitis than the population at large, it may reasonably be concluded that vaccination of a child does not create an added risk of infection to the other members of the family.

Table 5 outlines the occurrence of poliomyelitis in California among household contacts of a vaccinated child within a period of six weeks following the inoculation. Based on information about the household composition obtained in each of these cases, it was estimated that on the average there

TABLE 4.—Correlation Between Site of Inoculation and Site of First Paralysis in Cases of Poliomyelitis With Onset 30 Days or Less After Inoculation (California, 1955-1956)

Vaccination Group	Estimated Number of Children	Paralytic Cases	First Paralysis in Inoculated Extremity
April 12 to June 15:			
Cutter vaccine	227,000	27	23
Other vaccines	238,000	5	1
Sept. 1 to Feb. 29:			
All vaccines	547,000	7	....

TABLE 5.—Cases of Poliomyelitis in Household Contacts of Vaccinated Children* (California, April 12 to June 15, and September 1 to December 31, 1955)

Inoculation Group	Number of Vaccinated Children	Estimated Household Contacts Age 0 to 40	Cases Age 0 to 40		Rate per 100,000		Number of persons per case	
			Total	Paralytic	Total	Paralytic	Total	Paralytic
April 12 to June 15:								
Cutter.....	227,000	530,000	41	34	7.7	6.4	12,900	15,600
Other vaccines.....	238,000	550,000	15	10	2.7	1.8	36,700	55,000
Total population,† age 0 to 40....		8,100,000	248	126	3.1	1.6	32,700	64,300
September 1 to December 31:								
All vaccines (first inoculation) .	152,600	360,000	11	9	3.1	2.5	32,700	40,000
All vaccines (first or second inoculation)	312,000	740,000	30	19	4.1	2.6	24,700	38,900
Total population,† age 0 to 40....		8,100,000	275	169	3.4	2.1	29,500	47,900

* Includes cases with onset less than six weeks after inoculation of a household member.
† Cases and rates for total population, age 0 to 40, are based on an average six weeks incidence during the period indicated.

TABLE 6.—Comparative Incidence of Poliomyelitis in Vaccinated and Nonvaccinated Children Age 5 to 9 Years (California, June 15, 1955 to October 31, 1955)

Vaccination Status	Estimated Number of Children	Cases			Rate per 100,000			Per Cent Estimate of Effectiveness	
		Total	Paralytic	Nonparalytic	Total	Paralytic	Nonparalytic	Total	Paralytic
Nonvaccinated.....	886,000	210	113	97	23.7	12.8	10.9	....	....
Vaccinated.....	414,000	61	13	48	14.7	3.1	11.6	38	76

Note: All first inoculations were completed by June 15. Three cases (one paralytic) with onset less than 30 days after first inoculation are excluded.

were approximately two and a half nonvaccinated household contacts for each vaccinated child, taking into account the fact that in many households several children are vaccinated. While these estimates are not precise, they provide a reasonable basis for comparison of the experience of various vaccinated groups. For the group who received Cutter vaccine, there were an estimated 530,000 household contacts under 40 years of age. Among these contacts there were 41 cases of poliomyelitis, giving a paralytic incidence of 6.4 per 100,000 or approximately one paralytic case for each 15,000 household contacts. For the children who received other vaccines before June 15 last year, there were an estimated 550,000 household contacts under age 40 in whom there were 15 cases with a paralytic incidence rate of 1.8 per 100,000, or approximately one paralytic case per 55,000 household contacts. For comparison, the incidence of poliomyelitis for the total population of California under 40 years of age over an average six-week period comparable to the exposure period of the household contacts described above, is also shown in Table 5. In this population of some eight million persons there was an average six-week incidence rate of 1.6 for paralytic cases, or approximately one paralytic case for each 64,000 persons.

Even allowing for considerable error in the estimated number of contacts, these data provide strong evidence that the household contacts of Cutter vaccinated children had an incidence of paralytic poliomyelitis significantly higher than the population at large, whereas in the household contacts of children who received other vaccines early in 1955 there was no demonstrable increase in poliomyelitis.

A similar comparison was made of incidence among household contacts of children inoculated with vaccine released since last September (Table 5). By the end of December 1955, there were approximately 152,600 children in this group in California. Among the household contacts of these children there were 11 cases with a paralytic rate of 2.5, or approximately one paralytic case for each 40,000 household contacts. If to this group of children, who received only vaccine released after September, are added children who had received

one inoculation earlier in the season but who had later inoculations with vaccine released in the fall, there were approximately 312,000 children who by the end of December had had at least one inoculation of the newer vaccine. Among the estimated 740,000 household contacts of these children there was a paralytic incidence rate of 2.6 per 100,000, or approximately one paralytic case for each 39,000 inoculated children during the six-week postvaccinal period. In the population as a whole, under age 40, the average incidence of paralytic poliomyelitis was 2.1 per 100,000 or approximately one paralytic case for each 48,000 persons during a comparable six-week period. On the basis of these rather crude estimates the poliomyelitis experience of all of these last three population groups has been essentially similar, since last September. The fact that an increased incidence of poliomyelitis was readily demonstrated among the contacts of children who received Cutter vaccine gives added confidence that any significant risk would be detected for the contacts of other vaccinated children if risk existed.

Thus, in reviewing the data on vaccine safety as a whole, there has been no evidence in California, aside from the unique experience with Cutter vaccine, to suggest that inoculations with Salk vaccine have been attended by any demonstrable risk of causing poliomyelitis either in persons vaccinated or in their associates. These epidemiologic observations support the assurance of safety given by the Public Health Service's Technical Committee on Poliomyelitis Vaccine.⁵

VACCINE EFFECTIVENESS

Although it was not possible to conduct a controlled study of vaccine effectiveness during 1955 as was done during the field trials of 1954,² conditions were reasonably satisfactory in California for observing and comparing the experience of vaccinated and nonvaccinated groups of children. Since few new vaccinations were given in the state between June 15 and late September, the vaccinated population remained fairly stable during the period of peak incidence. Table 6 summarizes the over-all experience of the estimated 414,000 children within the 5 to 9 age group who had received at least one

TABLE 7.—Comparative Effectiveness of One and Two Inoculations of Poliomyelitis Vaccine in Children Age 5 to 9 Years (California, June 15, 1955 to October 31, 1955)

Vaccination Status	Estimated Number of Children	Cases			Rate per 100,000			Per Cent Estimate of Effectiveness	
		Total	Paralytic	Nonparalytic	Total	Paralytic	Nonparalytic	Total	Paralytic
Nonvaccinated.....	886,000	210	113	97	23.7	12.8	10.9	....	....
One inoculation, total.....	187,000	36	10	26	19.3	5.3	13.9	19	59
Cutter.....	64,000	11	3	8	17.2	4.7	12.5	27	63
Parke-Davis or Lilly.....	123,000	25	7	18	20.3	5.7	14.6	14	55
Two inoculations, total.....	195,000	25*	3	22	12.8	1.5	11.3	46	88
Cutter-Parke-Davis.....	103,000	13	1	12	12.6	1.0	11.6	47	92
Parke-Davis or Lilly.....	92,000	12	2	10	13.0	2.2	10.9	45	83

* Includes four nonparalytic cases with onset less than 14 days after second inoculation.

TABLE 8.—Effectiveness of Poliomyelitis Vaccine in California—Cases With Onset 30 Days or More After First Inoculation, Age Group 0 to 14 Years (September 1, 1955 to February 29, 1956)

Month	Rate per 100,000 Nonvaccinated Age 0 to 14		Vaccinations Since September 1				Vaccinations Prior to September 1						
	Total	Paralytic	Vaccinated Over 30 Days	Expected Cases		Observed Cases	Vaccinated Over 30 Days	Expected Cases		Observed Cases			
				Total	Paralytic			Total	Paralytic				
Total.....	.....	.....	.....	17	11	7	3	.....	104	68	42	11
September.....	5.8	3.2	.....	.....	.....	.....	.....	465,000	27	15	19	4
October.....	4.7	3.2	11,000	.....	.....	.....	.....	465,000	22	15	7	.....
November.....	3.8	3.0	39,100	2	1	.....	.....	465,000	18	14	6	4
December.....	3.2	1.9	89,100	3	2	4	2	465,000	15	9	2	1	
January.....	2.6	2.0	152,600	4	3	1	.....	465,000	12	9	4	1
February.....	2.2	1.4	364,200	8	5	2	1	465,000	10	6	4	1	
				Per cent estimated effectiveness			59	73	Per cent estimated effectiveness			60	84

Note: Estimated effectiveness = $(1 - \frac{O}{E}) \times 100$

(Effectiveness is the difference between the expected rate—that is the rate in uninoculated children—and the actual rate, expressed in per cent. Thus, if there were 60 cases in a group of persons who did not receive the vaccine and 30 cases in a similar group who were inoculated, the effectiveness would be stated as 50 per cent.)

inoculation of vaccine before June 15. This comparison is based on cases having onset more than 30 days after the first inoculation to allow a reasonable time for antibody development, and the elimination of cases that were in the early incubatory stages at the time of inoculation. Only one paralytic case was excluded on this basis. Between June 15 and the end of October, among the 886,000 nonvaccinated children, there were 210 cases of poliomyelitis, 103 of them paralytic, giving a total incidence rate of 23.7 and a paralytic rate of 12.8 per 100,000. Among the vaccinated children during the same period there were 61 cases, of which 13 were paralytic, a paralytic incidence rate of 3.1 per 100,000. Expressed as percentage effectiveness, this observed difference in rates represents a 76 per cent reduction in paralytic cases in the vaccinated group. If total incidence is considered, without regard to the paralytic status, there was a reduction of 38 per cent in the number of cases expected in the vaccinated group. Thus, although there appears to have been a significant reduction in the total number of expected cases, the reduction in paralytic illness was the more striking.

In Table 7 data on these same children are shown in further detail to compare the effectiveness of a

single inoculation with that of two inoculations. Among 187,000 children who received a first inoculation before June 15 and went through the summer without receiving further inoculations, there were ten paralytic cases, giving a paralytic incidence rate of 5.3 per 100,000. Compared with the rate of 12.8 in nonvaccinated children, this is a reduction of 59 per cent in the expected number of paralytic cases. Among the 195,000 children who received two inoculations, there were only three paralytic cases, giving a rate of 1.5 per 100,000 or a reduction of 88 per cent in the number of expected paralytic cases.

A question naturally arises as to how much influence the Cutter vaccine had in producing this level of effectiveness. Therefore, the Cutter-vaccinated group may be compared with the combined experience of those who received Parke-Davis or Lilly vaccine (Table 7). Among 64,000 children who received a single inoculation of Cutter vaccine, there were three paralytic cases, giving a paralytic rate of 4.7 per 100,000, which, compared with the nonvaccinated group, gave an estimated effectiveness of 63 per cent against paralytic poliomyelitis. The 123,000 children who received a single inoculation of either Parke-Davis or Lilly vaccine ex-

perienced a paralytic rate of 5.7, a reduction of approximately 55 per cent from expected paralytic incidence.

In the group of children who received two inoculations, there were approximately 103,000 who received a first inoculation of Cutter vaccine and second inoculations with other vaccine, usually Parke-Davis. Among this group there was a single paralytic case, giving a rate of one per 100,000 or an estimated effectiveness of 92 per cent against paralytic poliomyelitis. Among the group of approximately 92,000 children who received two inoculations of either Parke-Davis or Lilly vaccine there were two paralytic cases, giving a rate of 2.2 per 100,000 or an estimated effectiveness of 83 per cent.

Because of the small numbers of cases involved, these differences are not significant by the usual statistical standards and no firm conclusions can be drawn on the relative effectiveness of Cutter vaccine as compared with Lilly and Parke-Davis vaccine. There is a suggestion that the Cutter vaccine was somewhat more effective, but the differences are so small that the over-all estimate of effectiveness would be changed very little if the Cutter-vaccinated group were excluded and judgment was based entirely on the experience with other vaccines.

Thus, in summary, in the children vaccinated early in the season last year there was approximately 60 per cent less paralytic poliomyelitis following one inoculation and 85 per cent less following two inoculations than there was among children of similar age who were not inoculated. This is remarkably similar to observations in the Massachusetts epidemic last summer in which the paralytic poliomyelitis rate in 138,000 children who had a single inoculation was approximately 60 per cent⁴ less than the rate in children who were not inoculated.

A question frequently asked since the introduction of new safety testing standards is: Have these new procedures to assure the safety of the vaccine seriously impaired its efficacy? First, it may be recalled that potency tests in monkeys are conducted on each batch of vaccine, and that all vaccine released must meet requirements of potency set by the Division of Biologics Standards of the Public Health Service. To finally evaluate the efficacy of the newer vaccines on the basis of field experience with mass use of them will require continued observation through the next poliomyelitis season. Some very tentative observations can be made, however, based on the experience with the vaccine released since September 1955, as summarized in Table 8. In this table are shown the cumulative total numbers of children under 15 years of age

who by the end of each month from September 1955 had been vaccinated 30 days or more ago. Based on the experience of nonvaccinated children of the same age, some 17 cases, including 11 paralytic cases, would have been expected between October 1955 and the end of February 1956. During this time seven cases were observed, three of which were paralytic. These numbers are, of course, extremely small for statistical purposes. During this late period in the disease year, incidence rates are at their lowest and provide a narrow margin in which to demonstrate vaccine effectiveness. On the basis of these small numbers, however, the total incidence among the vaccinated was less than half the number of "expected cases," and paralytic incidence was about one-fourth. If sustained, this level of effectiveness is almost identical to that observed during the summer among children vaccinated early last year.*

Table 8 also shows continued observation during the fall and winter of the vaccinated children who received at least one inoculation last spring and were followed through the summer. About half of these children had had second inoculations with "old vaccine" in the spring, and during the late fall and winter over 150,000 more received a second inoculation with the "new vaccine." A few had boosters. This is, therefore, a mixed group having first and second inoculations with old and new vaccine, and with a very high proportion having had second inoculations. If the vaccine had had no effect, 104 cases—68 paralytic—would have been expected. Only 42 cases were observed and the paralytic incidence was reduced from the expected 68 cases to only 11. Expressed as percentage effectiveness, this group experienced a 60 per cent reduction in total incidence and an 85 per cent reduction in paralytic incidence as compared with their nonvaccinated associates.

The experience of these two vaccinated groups offers real promise that a striking reduction in the total incidence of poliomyelitis can be achieved with the vaccine now available. Results in the newly vaccinated group encourage the belief that there has been no serious loss in effectiveness as a result of the stringent safety standards now in effect. The group vaccinated earlier gives evidence of the high degree of protection which can be expected in a population in which most have had two or more inoculations.

It is particularly noteworthy that, although the chief criterion of vaccine effectiveness has been the reduction in paralytic cases, these data indicate the vaccine is doing something more than merely converting paralytic illness to a milder nonparalytic

*As of July 15, 1956, further observations since this report was prepared have improved the estimated effectiveness against paralytic poliomyelitis to 80 per cent.

form. As the season has progressed and more children have received second inoculations, a consistent improvement has been noted in the per cent reduction of total incidence to the 60 per cent reduction shown in Table 8. It therefore appears that, as the immunization levels are built up, the vaccine has the effect, at least in some persons, of suppressing infection below a recognizable clinical threshold; whereas in others it results in lessened severity of illness and a conversion of paralytic poliomyelitis to a milder nonparalytic illness. Thus, total and paralytic rates are reduced, while nonparalytic rates are not greatly altered.

Confirmation of these impressions will, of course, require further observation. Many unanswered questions remain concerning the mechanism of action and the effects of the vaccine. Why the unexpected effectiveness of even a single inoculation? What effect does the vaccine have, if any, on silent infections, on the spread of virus through the family and the community? What are the reasons for apparent vaccine failures? What is the optimum dosage schedule? How frequently and for how long in life should booster injections be given? Answers

to these questions will require further virologic and immunologic studies of poliomyelitis, coupled with extensive epidemiologic observation; but experience in California at this point has confirmed that the vaccine is safe and provides significant protection against paralytic poliomyelitis.

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Use of Tranquilizers in Diseases of the Skin

A Preliminary Report

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WITHIN THE PAST TWO YEARS the use of tranquilizers in dermatology has become increasingly frequent. The administration of these drugs in inflammatory dermatosis has stemmed not so much from consistent effectiveness in treatment as from the great need for an agent to reduce anxiety, nervous tension, emotional stress and pruritus. The role played by these factors in the pathogenesis and course of many of the inflammatory diseases of the skin has been adequately emphasized by Sternberg,⁶ Obermayer,² Sulzberger,⁷ Rein⁴ and others.

Agents previously used to diminish the effect of psychic and emotional factors included barbiturates, chloral hydrate, bromides and the antihistamine drugs. They were unsatisfactory for the most part because of side reactions, habit formation, development of tolerance, and because sometimes they did not bring about relaxation of the patient. Hence, when chlorpromazine and reserpine became available they were given enthusiastic and widespread trial.

Some 274 patients with inflammatory conditions such as atopic dermatitis, neurodermatitis, eczematoid dermatitis, lichen planus, psoriasis and pruritus ani et vulvae were treated at the University of California Medical Center at Los Angeles and at the Veterans Administration Center Hospital with either chlorpromazine or reserpine. The observations of clinical response were varied and confusing. Therapeutic results ranged from excellent to poor. The degree of tranquilization varied greatly from patient to patient, and in a number of subjects agitation rather than a tranquilizing effect was observed. Similarly, the control of pruritus was extremely variable and while diminution of this symptom was observed, total abolition was seldom achieved without adjunctive therapy. In many instances, evidence of tranquilization was present without concomitant improvement in the dermatitis. The overall incidence of slight to pronounced beneficial effect attributed to reserpine and chlorpromazine was placed at 60 per cent in this group of 274 patients. Untoward re-

• Tranquilizing agents such as chlorpromazine and reserpine were used in various diseases of the skin in which the psychogenic factors were considered important etiologic agents. While a tranquilizing effect was obtained in the majority of instances, the side reactions and variation in response were so great as to render these agents unsatisfactory for routine use as tranquilizers. Meprobamate (marketed under the trade names Miltown and Equanil) was then used on a group of dermatologic patients with more consistent tranquilizing effect and comparatively little unpleasant side reactions. It is felt that further study of the use of meprobamate as a tranquilizing agent in dermatology is worth while.

actions such as headache, nausea, vertigo, drowsiness, nasal congestion and depression were so pronounced in many instances as to necessitate discontinuance of the drug.

It was apparent from these early clinical observations that evaluation of the efficacy of the tranquilizers could best be accomplished by using double blind controls. Pillsbury,³ Livingood,² and others aptly stressed that clinical investigation without controls can be misleading and inaccurate. This is especially true when dealing with such subjective symptoms as emotional stress, anxiety, nervous tension and pruritus. In order to attempt clarification of this problem, a study of the effect of a reserpine tranquilizer in these symptoms was instituted using controls. Fifty-two hospitalized patients were given either 0.25 mg. of reserpine or a placebo four times daily and clinical response was observed by the dermatology staff. No person participating in the study knew whether a patient was receiving the drug or the placebo, although in some instances side reactions indicated active medication. Local therapy other than a bland ointment or starch baths was withheld.

The following conditions were studied: Atopic dermatitis, 22 patients; neurodermatitis, six patients; eczematoid dermatitis, 14 patients; psoriasis and lichen planus, five patients; chronic urticaria, five patients. Of the 30 patients treated with reserpine, 16 showed improvement of varying degree, while 14 were unimproved. Tranquilization was considered a symptom of improvement even though not

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accompanied by significant skin change, inasmuch as subjective complaints were less. Of the 22 placebo-treated patients, four improved and 18 showed no improvement.

It is realized that no conclusion can be drawn from so small a series, but the results are considered indicative. The ratio of benefited to nonbenefited patients receiving reserpine therapy approximates the previous clinical experience wherein response was varied, inconsistent and unpredictable. The incidence of unpleasant side reactions was sufficiently great to cause many patients to discontinue use of the drug.

For the foregoing reasons, a new tranquilizing agent meprobamate, a carbamide derivative marketed under the trade names of Miltown and Equanil and related to mephenesin or tolserol, was subjected to clinical testing. Meprobamate possesses, in addition to muscle relaxing properties, a pronounced emotional and psychic tranquilizing effect. Its mode of action is by blocking interneuronal stimuli between cortex, thalamus and hypothalamus. Unpleasant side reactions, in the authors' experience, are infrequent and toxicity is low. Selling⁵ reported that one patient took 50 and another patient 100 400-mg. tablets in a 24-hour period without serious consequences.

Either Miltown or Equanil (400 mg. four times daily) was given to 164 patients with the various kinds of inflammatory diseases of the skin dealt with in the previous study of the effect of chlorpromazine and reserpine. A tranquilizing effect, as manifested by relaxation of nervous tension, diminution of anxiety and emotional stress and lessening of pruritus, was more consistently observed and was greater in degree than was obtained with reserpine therapy. Almost all patients troubled with insomnia volunteered their sleeping habits had considerably improved. Side reactions were minimal, principally

drowsiness which usually diminished after three days of therapy. Two patients complained of nausea, but it abated without continuance of treatment. Selling⁵ reported urticaria and angioneurotic edema in three of 137 patients. No reactions of that kind were noted in the present study.

Clinical response of the dermatoses while varied, was more consistent than in the patients who were given reserpine. Even in cases of severe dermatitis not responding significantly to tranquilization, the calming effect, nevertheless was sufficient to make management easier. Agitation, which was not infrequently observed in patients given reserpine, was noted in but one instance in the study with meprobamate. Meprobamate was found to be particularly useful when steroid therapy was being discontinued. The results were sufficiently encouraging to indicate meprobamate may be the drug of choice in many cases in which tranquilization is desired. Additional studies are in progress.

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Acute Perforated Appendicitis in Childhood

Analysis of Management, Including the Use of Hypothermia

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IN RECENT YEARS the mortality and morbidity resulting from acute perforated appendicitis in childhood have been diminishing gradually. This decrease has been the result of many factors.^{1,5,8,10} However, certain problems characteristic of the disease continue to be subject to debate, and undoubtedly affect the morbidity and the residual mortality.

The first of these problems is the difficulty sometimes encountered in making the diagnosis, especially in a very young child. The second is the problem of management of a highly febrile and "toxic" child with acute perforated appendicitis who does not respond, by decrease in the temperature and in the pulse rate, to the usual preoperative measures carried on for the usual period of time. The third is the question regarding the advantage of draining the peritoneal cavity in children with this disease.

In attempting to increase understanding of these three problems, a study was made of the records of patients with acute perforated appendicitis at the Los Angeles Children's Hospital during the past five years. Ninety-nine patients with this disease were treated between January 1, 1951, and December 31, 1955. There were three deaths, a mortality rate of 3.03 per cent. Two of the deaths were due to a failure of diagnosis, each child being moribund when first seen. One was an infant 11 days of age and the other a child of two years. Operation was not done on either patient; appendicitis was noted at autopsy. The third death was due to a failure of management and the case will be discussed in further detail. The mortality rate for the group in which operation was done was, therefore, 1.03 per cent.

Often the chief difficulty in making the diagnosis may be a lack of peritoneal localizing signs.^{1,3,11} It has been well established^{6,8,11} that diagnostic difficulty is greatest in infants and children under two years of age. Chart 1, in which the lack of localizing signs is correlated with the ages of the patients, demonstrates this fact graphically for this series. The leukocyte content of the blood usually corresponded with the clinical findings, the average being 18,670 leukocyte cells per cu. mm., with 76.7

• From an analysis of a recent series of 99 cases of acute perforated appendicitis in childhood several conclusions appeared valid.

1. The majority of infants and young children with acute perforated appendicitis do not exhibit the signs of localization of peritoneal irritation so characteristically seen in older children and adults. Hence if a history compatible with acute perforated appendicitis is present and there is evidence of peritoneal irritation on repeated examinations, patients of this age group may be assumed to have the disease and should be prepared and operated upon with minimal delay. Early operation after a maximum of several hours of preparation with parenteral hydration, nasogastric suction and antibiotics is the treatment of choice.

2. In nine patients in the present series with temperature and rapid pulse that did not fall to safe levels with the usual preoperative preparation, mild hypothermia appeared to reduce the risk of anesthesia and operation.

3. The use of intraperitoneal drains in children with acute perforated appendicitis is associated with a definite reduction in the incidence of postoperative intraperitoneal abscesses and with a probable reduction in the number of serious wound infections.

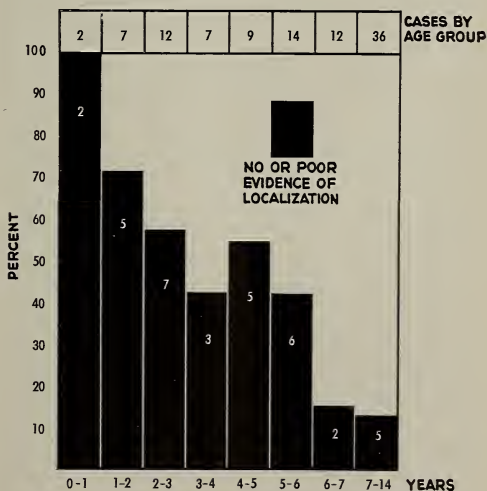


Chart 1.—Relation of peritoneal localizing signs to age of patient in acute perforated appendicitis in childhood.

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per cent polymorphonuclear cells. In 12 patients, however, leukocytes numbered 10,000 or fewer per cu. mm. Seven of these patients were three years of age or under. All had evidence of general peritoneal irritation, but none exhibited signs of localization. It is apparent that both the clinical and laboratory aids in diagnosis may be doubtful in a very young patient with acute perforated appendicitis. However, it is usually possible to rule out extraperitoneal causes producing signs of peritoneal irritation. Since the penalty for delay in operating upon a patient in this age group with this disease is so much greater than that for laparotomy with a mistake in diagnosis, the policy at Los Angeles Children's Hospital is to prepare and operate upon such children without undue delay, provided the history is reconcilable with acute appendicitis and there is evidence, on repeated examinations, of peritoneal irritation not otherwise accounted for. Signs of localization are not considered essential for the diagnosis.

Occasionally a child with evidence of acute perforated appendicitis enters the hospital with an unusually high fever and rapid pulse and neither is reduced to safe levels by the usual preoperative preparation. Forty-four patients were admitted with temperatures of 39° C. (102.3° F.) or more. Accompanying tachycardia, a rate of 140 per minute or greater, was noted in 34 of them. Nine of these children did not respond, by appreciable fall in temperature or pulse, to parenteral hydration, nasogastric suction, administration of antibiotics and simple cooling measures carried on for periods of eight hours or more. When faced with this problem a surgeon has two choices. He may delay operation indefinitely, awaiting localization of the peritonitis. This policy is associated with a greater morbidity and often greater mortality in this age group, since the peritoneum of young children appears less capable of effecting localization of a suppurative process than that of the adult.^{3,6,8,9} The only surgical death in the present series of cases occurred when operation was delayed because tachycardia did not decrease during the usual period of preparation. The patient was a six-year-old girl who had had symptoms for six days prior to admission in May, 1951. Upon entry, although the temperature was only 38.5° C. (101.4° F.), the pulse was 160 and the general condition of the patient was poor. After 40 hours of supportive and antibiotic treatment the rectal temperature was 41.1° C. (106° F.) and the pulse rate 180. Drainage of the iliac fossa was then carried out under local anesthesia. However, evidence of the peritonitis remained, residual subhepatic and pelvic abscesses being found at a later operation, and a residual left subphrenic abscess at autopsy.

The surgeon's second choice of management in

the occasional case of the highly febrile child who has not responded to the usual preoperative preparation is to proceed with the operation in spite of the fever and rapid pulse. Although he avoids the penalty of delayed operation, he encounters three other serious risks associated with anesthesia and operations in children with a high fever and tachycardia. The first is "ether convulsion," a series of generalized convulsions which may occur in febrile children under deep anesthesia. The convulsions appear to be due to carbon dioxide retention, and unless rapidly controlled by intravenous barbiturates and hyperventilation they may be fatal. The second risk is the development of circulatory failure secondary to increasing tachycardia. The rapid pulse first appears in the febrile patient as a compensatory mechanism—an attempt to bring about proper oxygenation of tissues whose metabolic requirements are greatly increased due to the fever. The heart rate may rise to a level wherein the diastolic filling of the ventricles becomes inadequate, causing circulatory collapse.

The third serious risk of anesthesia and operation in a febrile child is postoperative hyperpyrexia. This is a rare complication in which high postoperative fever is associated with severe central nervous system damage, occasionally leading to death. It is thought to be due to suboxygenation of tissues of the brain due to insufficient compensation for the increased oxygen demand occasioned by the fever.

During the period of this study, early operation was carried out in all children after a period of preoperative preparation averaging four hours and ranging from a minimum of 30 minutes in the most favorable case to 17 hours maximum in the most "toxic" case. The one (fatal) exception to this regimen has already been noted. The only other delay occurred in an eight-year-old girl in whom an appendiceal abscess was present on admission. From 1951 to 1954 the anesthetic risks occurring in children whose temperature and pulse remained unusually high in spite of adequate preoperative preparation were successfully avoided. This was done by using a fairly heavy preoperative medication (consisting of a barbiturate, an opiate and scopolamine) followed by nitrous oxide analgesia, with local procaine employed by the surgeon. At best the operating conditions so produced can be described as "fair." During the year 1955, the complications of anesthesia in these highly febrile children with acute perforated appendicitis were avoided by employing preoperative external cooling, which produces mild hypothermia and concomitant reduction of the pulse. This procedure appears to afford a degree of safety equal to or greater than that afforded by the previous

TABLE 1.—Relationship of Type Drainage to Incidence of Complications in Acute Perforated Appendicitis in Childhood

Type Drainage	Cases	Postoperative Intra-abdominal Abscesses	Postoperative Intestinal Obstruction	Wound Infection*
Peritoneal drainage	68	5 (7.3%)	3 (4.4%)	5 (7.3%)
Drain into abscess	3	0	0	0
Wound drain only	17	4	1	2
No drains	9	3 (26.9%)	0 (3.8%)	1 (11.5%)

*Infection of sufficient severity to require further operation or to prolong hospitalization.

method and in addition allows the anesthesia to be given more electively so as to produce better operating conditions for the surgeon. Cooling has been kept to a minimum of 30° C. (86° F.), and to an average of 34.7° C. (94.4° F.) rectal, thus avoiding the complications sometimes encountered with more extensive hypothermia. The technique is described elsewhere.² Nine patients of this series were so treated. The hypothermia had no clinical effect upon the peritonitis nor upon response to antibiotics. The postoperative course of the patients subjected to hypothermia differed in no way from the course of those in whom it was not used. The cooled patients returned to normal temperature in an average of one hour and 41 minutes, and thereafter rapidly reached the febrile state usually seen postoperatively in children with this disease.

At present preoperative external cooling is being used for children with acute perforated appendicitis whose temperature remains 39° C. (102.3° F.) or greater, or whose pulse remains 130 per minute or more after four to eight hours of the usual preoperative preparation. Cooling is governed by the heart rate and is continued until the pulse falls to the range of 90 to 110 per minute.

The subject of draining the peritoneal cavity after appendectomy for acute perforated appendicitis in childhood has been much discussed by a number of investigators.^{3,4,5,6,7,8,9} In theory, peritoneal drainage is used primarily to prevent the accumulation of residual intraperitoneal collections of pus, and secondarily to minimize infections of the wound. Table 1 shows the types of drainage used in the present series, their relationship to the incidence of these two complications and also to the incidence of postoperative intestinal obstruction. Residual peritoneal abscesses occurred in 7.3 per cent of the patients who had peritoneal drainage and in 26.9 per cent of those who had not. One must conclude that when peritoneal drainage is omitted in the treatment of acute perforated appendicitis in children the risk of occurrence of residual intraperitoneal abscesses is greatly increased. The incidence of postoperative intestinal obstruction in this series showed no significant relationship to the type of drainage, but the occurrence of serious postoperative wound infection

TABLE 2.—Morbidity of Acute Perforated Appendicitis in Childhood

Type of Case	Number	Days Hospitalized (Average)
Peritoneal drainage	68	13.4
No drainage	26	12.5
Abscess drained	3	13.3
With complications	21	22.2
Without complications	75	10.8

appeared to be somewhat greater when peritoneal drainage was not used. The morbidity of acute perforated appendicitis as expressed in hospital days varies with the occurrence of complications and with the use of peritoneal drains (Table 2). In spite of the advantage of shortening the hospital stay in uncomplicated cases in which such drains have been omitted, the average data indicate that the added risk of complications when peritoneal drainage is not used cancels out this advantage.

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Dr. Brayton has emphasized three important aspects in the diagnosis and management of acute appendicitis with perforation in children. At the Children's Hospital of the East Bay in Oakland, from 1946 to 1955 we had 822 cases of acute appendicitis of which 100 were perforated. We also were impressed by the absence of localizing signs, especially in the young child. Since the history is of relatively little value in the diagnosis in these young children, the physical examination is very important. The majority of this group were seen and not diagnosed prior to perforation. There seemed to be little delay in diagnosis once peritonitis was established.

Preparation of the toxic febrile child is logical but often neglected. Administration of parenteral fluids and nasogastric suction does not necessarily prepare the child for operation. It is obvious that a detailed preparation has been instituted at the Los

Angeles Children's Hospital. Although we did not have any of the anesthetic complications described, varied convulsive acts are not uncommon. An experienced anesthesiologist can quickly control these with intravenous barbiturates and hyperventilation through an intratracheal tube. All our seriously ill patients are intubated. We have not used hypothermia. Although Dr. Brayton's experience is limited, one cannot but be impressed by its logic. Keeping the temperature at a reasonable level should prevent any of the undesirable effects of hypothermia. Feeble attempts toward hypothermia has been a standard procedure for toxic febrile children. However, a more enthusiastic approach seems logical.

I am interested in the large number of cases in which intraperitoneal drainage was used. We only drained the peritoneum in 22 per cent of the cases. Our average hospital stay was about the same as that reported by Dr. Brayton. We do not use intraperitoneal drainage unless a definite abscess is present or the retroperitoneal spaces have been exposed.



Pulsating Lesions Metastatic from Renal Cancer

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PULSATILE MASS palpated in the course of physical examination of a patient may be diagnosed immediately as an aneurysm and consequently further definitive diagnostic steps unduly delayed. Since the cases to be described herein aroused considerable interest on the wards as to various diagnostic possibilities, a brief review of the pertinent literature was thought to be indicated.

Paget,¹⁰ in a discussion of tumors of the ribs and sternum, pointed out that "sarcoma of the sternum has been mistaken for aneurysm and aneurysm for it," but in none of the 23 cases listed were the lesions described as pulsating. Eshner⁴ (1908) reported a case of hypernephroma of the kidney with metastasis to the manubrium which simulated an aneurysm of the aorta. In 1915 Taylor¹² described a case of multiple pulsating tumors secondary to hypernephroma. MacLeod and Jacobs⁶ (1921) described two cases in which pulsating sternal masses were at first diagnosed as aneurysms of the aorta. Upon histologic study it was noted that both lesions were metastatic from hypernephroma of the kidney, and the primary tumor was confirmed in one case by autopsy.

Dresser³ discussed the manifestations of hypernephroma in bone and reported ten cases, in two there were pulsating metastatic lesions. One occurred in the upper sternum and the other in the medial portion of the clavicle and the manubrium. In 1926 Alessandri¹ described four cases of bony metastasis from hypernephroma. In three of them the lesions were pulsating: one in the parietal area, one in the dorsum of the left foot and one in the scapula. In an extensive review of the literature he noted that of 92 metastatic lesions reported, 27 were either pulsating or highly vascular. He pointed out that in a number of cases the bony lesion was the only apparent metastasis.

Fabre⁹ (1935) reported a case in which there was a pulsating tumor in the right first interdigital space. Upon postmortem examination a hypernephroma at the inferior pole of the left kidney was observed.

Crile² (1936) reported four cases of pulsating tumors of the sternum. One of the lesions was

- The differential diagnosis of a pulsatile mass found on physical examination should include metastasis from a carcinoma of the kidney. If the mass occurs in the region of the sternum with no abnormality noted in the thyroid gland upon examination, the primary tumor is most frequently in the kidney even though there may be no symptoms referable to the urinary tract.

metastatic from a hypernephroma and three were metastatic from thyroid carcinoma. In a review of the literature, Crile could find no reported case of a verified pulsating primary neoplasm of the sternum or a pulsating tumor metastatic from carcinoma of the breast. Of a total of 18 pulsating neoplasms of the sternum, nine were probably metastatic from hypernephroma and nine from carcinoma of the thyroid. In eight of the nine cases metastatic from hypernephroma, sternal pain or the appearance of tumor preceded the development of any urinary symptoms. In the cases in which the lesions were metastatic from the thyroid, the first symptoms were caused by the primary tumor or by metastasis to regions other than the sternum in six of the nine cases. Roth and Davidson¹¹ (1937) reported on a case in which a pulsating sternal mass proved to be metastatic from hypernephroma.

Mider and Morton⁸ reported on pulsating benign giant cell tumors of bone. They collected reports of four cases from the literature and added one of their own. All were proved histologically and the lesions were located as follows: lower radius, lower one-third of ulna, dorsolumbar region, internal part of head of tibia, and left sacroiliac.

Nalle⁹ (1947) reported on a patient with a pulsating mass in the left shoulder and in the left inguinal region. Retrograde pyelograms showed changes compatible with cancer, but autopsy was not done.

REPORTS OF CASES

In a review of the records at the San Francisco Veterans Hospital for a period of seven years, four cases with pulsating metastatic lesions were found. Three of the patients (Cases 2, 3 and 4 in the following report) were seen by one or both of the authors.

CASE 1. A 52-year-old white carpenter entered the Veterans Administration Hospital, San Francisco,

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in April, 1947, with complaint of a painful lump over the right hip for two months. A sister had a tumor of the large bowel (type unknown) removed some seven years previously, when she was 25 years of age.

The patient considered himself well until November, 1945, when, while working on a ladder, he fell and injured his left flank. Following this he had blood in the urine and passed some clots. These symptoms continued intermittently until his admission to another hospital where left nephrectomy was performed in February, 1946. The patient was then well until the mass over the right hip gradually developed over a period beginning in February, 1947. This mass subsequently became painful, and it was reported that upon needle aspiration prior to entry to the hospital "a cup of blood" was withdrawn. During the two months preceding admittance, the patient's weight decreased 15 or 20 pounds.

The patient appeared pale and chronically ill. The blood pressure was 145/85 mm. of mercury, the pulse rate 84. Hearing was subnormal in both ears. There was a 7 x 8 cm. flat, freely movable, nonpulsating mass underlying the left breast. Many veins radiated in all directions from the mass, and a blowing systolic murmur was heard over it. Over the right sacroiliac joint there was an 8 x 8 cm. fixed round mass which was warm and pulsating. Many blood vessels radiated from it, and a loud systolic murmur was audible over it.

The hemoglobin content of the blood was 10.0 gm. per 100 cc. Mean corpuscular volume was 85.3 cu. microns, the mean corpuscular hemoglobin 23 micromicrograms and the mean corpuscular hemoglobin concentration 27 per cent. X-ray films showed destruction of the right fourth rib in the axillary region, the left fourth rib anteriorly, the anterior portion of the body of the fourth thoracic vertebra and the superior portion of the right ilium and adjacent portion of the sacrum.

Slides of specimens of the kidney that was removed in February, 1946, were obtained and the diagnosis was clear cell carcinoma of the left kidney. X-ray therapy to the mass over the hip gave temporary alleviation of pain. A second pulsating mass developed subsequently in the right mid-axillary line. A systolic murmur was audible over it. The mass beneath the left breast enlarged but did not pulsate. However, a murmur still could be heard over it as well. The condition of the patient deteriorated steadily and he died August 17, 1947. Permission for autopsy was refused.

CASE 2. A 61-year-old Russian-born white man, a woodshop worker, entered the Veterans Administration Hospital, San Francisco, for the first time December 17, 1951, with complaint of painful swelling of the right wrist for two months.

Approximately a year previously a nodule had been removed from above the right eye and the patient was then advised he should be studied for

a possible tumor elsewhere, but he said he felt well and declined. About two months before admittance to the Veterans Administration Hospital, a swelling developed on the right wrist and another on the right chest wall. The patient had no symptoms referable to disease of the urinary tract but the body weight had decreased 40 pounds during the preceding year.

The blood pressure was 150/100 mm. of mercury and the pulse rate 76. An egg-sized mass was palpated in the right pectoral muscle. This lesion was not attached to bone or skin, but there was pronounced venous distention over it. In addition, there was nonpulsating mass 5 cm. in diameter at the right radial head with increased skin temperature and vascularity over it.

The hemoglobin content was 14.6 gm. per 100 cc. Erythrocyte sedimentation was 37 mm. in one hour. Leukocytes numbered 16,500 per cu. mm.—65 per cent polymorphonuclear cells with a 51:14 ratio of segmented to banded forms, 30 per cent lymphocytes, 4 per cent monocytes and 1 per cent basophils. The specific gravity of the urine was 1.035. It contained no albumin and no abnormalities were observed microscopically.

Upon roentgenographic examination three soft masses 1 cm. in diameter were seen within the lungs, and a destructive lesion in the distal end of right radius. Excretory urograms showed a large mass in the inferior pole of the left kidney.

The tumor on the wall of the chest was excised. It was a clear cell carcinoma, presumably metastatic from the kidney. Slides from the original lesion from above the right eye were obtained and these also showed clear cell adenocarcinoma probably metastatic from the kidney. X-ray therapy of the wrist lesion diminished pain somewhat. On April 12, 1952, gross hematuria occurred. On November 11, 1952, the patient was again seen with a mass on the right wall of the chest in addition to the lesion still present on the right wrist. Excretory urograms were essentially unchanged. When the patient was admitted to the hospital for the fourth time on April 27, 1953, the lesion on the wrist had increased two or three times in size and had become soft and warm. Both it and the mass over the right anterior chest were pulsatile. The patient died July 5, 1953, and permission for autopsy was denied.

CASE 3. A 50-year-old white man entered the Veterans Administration Hospital, San Francisco, for the first time September 23, 1951, with pain and weakness of the right upper extremity for three weeks. The left upper extremity had been amputated following injuries incurred in combat in 1917. In 1947 an exploratory laparotomy had been done because of a palpable mass in the left upper quadrant of the abdomen and recurring epigastric pain. The mass was in the left retroperitoneal space. A biopsy specimen was obtained and the diagnosis was adrenal adnexa. The patient was treated with x-ray for five weeks and the size of the tumor was halved.

In April, 1948, the patient was again operated on and an 820 gm. encapsulated tumor was removed from the left retroperitoneal space. It was diagnosed as a benign adrenal adenoma. In September, 1951, the patient meanwhile having been well except for a minor episode of trauma to the right elbow in December, 1950, he had abrupt onset of severe pain in the right upper extremity radiating from the elbow to the shoulder and sometimes to the scapula. Progressive weakness of the fourth and fifth fingers developed.

Upon admittance to hospital the blood pressure was 180/100 mm. of mercury and the pulse rate 76. The left anterior chest was noted to be slightly prominent. There was weakness of the triceps, flexors and extensors of the wrist and diffuse muscular weakness in the right hand, especially the fourth and fifth fingers. The triceps reflex was absent in the right arm (the left arm had been amputated) and there was diminished sensation to pain over the fifth finger.

No abnormalities were noted upon examination of the blood and the urine. Detailed roentgen studies of the cervical spine on December 6, 1951, showed a destructive process on the inferior aspect of the seventh cervical vertebra. No abnormalities were noted upon examination of cerebrospinal fluid.

Slides of the tumor removed in 1948 were reviewed and they were thought to show malignant neoplasia, probably of renal origin. Hence it was felt that the cervical lesion was metastatic and the neck was treated with x-ray with some improvement of symptoms. The patient was again admitted to hospital in October, 1952, and a hard, slightly tender mass was noted over the entire sternum below the manubrium. Sensory and motor function of the right arm seemed intact. No changes from the previous x-ray films of the cervical spine were noted.

The patient was admitted again in March, 1953, for recurrent pain in the neck and shoulders with radiation into the right upper extremity. The sternal mass was considerably enlarged and for the first time pulsation in it was noted. A systolic murmur was audible over it. X-ray films of the cervical spine were unchanged and upon complete examination of the patient no metastatic lesion other than that in the sternum was observed. It was concluded that the changes in the neck represented an old traumatic lesion. Therefore the chest lesion and the sternum were removed and a polyethylene plate was installed over the defect. Three months later the plate was removed because of bleeding that occurred when recurrent accumulations of fluid above it were withdrawn. The underlying structures had stabilized meanwhile. It was learned indirectly that the patient died in his home town. The exact date and details were not obtainable.

CASE 4. A 60-year-old white male laborer entered the Veterans Administration Hospital, San Francisco, September 3, 1952, with complaint of anterior chest pain.

TABLE 1.—Vascular Tumors Occurring in San Francisco Veterans Administration Hospital Over a 7-Year Period

Diagnosis	No. of Cases	No. of Cases with Local Extension and/or Distant Metastasis	No. of Cases with Pulsating Primary or Metastatic Lesion
Carcinoma of the kidney (hypernephroma)	19	15	4
Transitional cell carcinoma of the kidney.....	1	0	0
Adenocarcinoma of the thyroid	12	9	0
Thyroid carcinoma, metastasis from the bowel.....	1	1	0
Hemangiomas, various types.....	13	0	0
Osteogenic carcinoma	4	2	0
Osteolytic sarcoma	1	0	0
Chondromyxosarcoma	1	0	0
Periosteal fibrosarcoma	1	0	0
Liposarcoma	1	0	0

The patient considered himself in excellent health until April, 1952, when he had sudden onset of right shoulder pain accompanied by weakness of the right arm. He was examined a few months later and told that he had a "heart condition." He continued to have a persistent dull ache in the right upper chest with some radiation to the back. This pain was aggravated by forward bending. On July 17 he had sudden onset of severe substernal pain without radiation. It lasted several hours but there was no accompanying perspiration, collapse, dyspnea or palpitations. As the pain had not completely subsided after three days of rest in bed the patient sought admission to the hospital. The blood pressure was 160/90 mm. of mercury, the pulse rate 72. The patient was healthy appearing and the only physical abnormality noted was a 5 cm. pulsatile, tender, soft mass in the region of the manubrium and slightly to the right of the midline. No abnormalities were noted on examination of the blood and the urine. An electrocardiogram showed left ventricular hypertrophy but no myocardial infarction.

X-ray films of the cervical spine showed narrowing of three intervertebral spaces with associated hypertrophic changes. The central portion of the manubrium was destroyed. Excretory urograms and retrograde pyelograms showed a distortion of the excretory ducts on the left and possible cysts on the right. No other abnormalities were noted in a complete roentgenographic survey.

Upon exploration the right kidney was found to contain a benign cyst. After the patient recovered, the left kidney was removed and upon microscopic examination a diagnosis of clear cell carcinoma of the kidney was made. Since no lesion other than that in the sternum was found, the upper half of the sternum and the tumor were removed on January 5, 1953. A wire sternal prosthesis was installed but was removed in August, 1953, because of a persistent draining sinus tract. The area was then skin-grafted successfully. When last observed, February 15, 1955, the patient was feeling well and there was no clinical evidence of recurrence.

The records of the hospital for a seven-year period were reviewed, with attention to tumors that were thought to be sufficiently vascular, either as primary tumors or as metastatic lesions, to enter the differential diagnosis of a pulsating lesion. The results of this review are listed in Table 1.

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Reserpine and Chlorpromazine

Their Use in Alcoholic and Geriatric Patients

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AT THIS TIME a report of the direct clinical results of reserpine and chlorpromazine in hospitalized geriatric and alcoholic patients does not appear to be as important as a discussion of some of the less obvious implications that have been noted in the use of these drugs in the treatment of such patients.

The observations here discussed deal primarily with the use of reserpine and chlorpromazine in 33 chronic geriatric patients, and the use of chlorpromazine in 15 newly admitted patients with alcoholism.

Reserpine

In 23 chronic geriatric patients who received reserpine, the effects seemed to vary according to the dosage. From 0.5 mg. to 6.0 mg. daily was used, according to the patient's ability to tolerate the medication and according to the apprehension of the individual physicians using the drug. Agitation and disturbed behavior was decreased. The patient became more tractable, more cooperative and less demanding. Confusion, disorientation, loss of memory and other signs of organic involvement did not appear to be greatly affected, nor did the course of depressions seem to be greatly altered. Some of the bedridden patients became ambulatory or at least were able to sit in a wheelchair for part of the day. Three were eventually able to be considered for a leave to stay with relatives. On the other hand, the lethargy that was produced in some patients was a deterrent to further use of the medication after a few weeks. These results would appear to corroborate the general information at present available about reserpine, with but one additional and perhaps important finding.

In a group of nine geriatric patients to whom reserpine was given, cholesterol and blood lipoprotein determinations were obtained.* These patients

• Although reserpine and chlorpromazine had tranquilizing effect on a number of geriatric and alcoholic patients in a state hospital, several complicating results were noted, some with a bearing on the patients' health and others that might affect the assignment of personnel.

Lipoprotein studies carried out on patients receiving reserpine seemed to indicate that a reduction in the blood levels of the denser lipoprotein molecules took place during therapy.

Several elderly patients receiving chlorpromazine died of diseases that were not as sharply manifest by symptoms as they might be expected to be. Hence the need for closer observation than a limited staff could afford seemed a matter for consideration. Another consideration of the same order was the possible need for increased personnel for psychotherapy in light of the more receptive condition of the patients.

were given dosages from 1.0 mg. to 2.0 mg. daily for a three-week period and were then given 6.0 mg. daily. In five of these patients this dosage was continued for a period of more than six weeks; in the other four the medication was reduced or discontinued within a one to six-week period because increased lethargy was considered detrimental to the patient. None of the nine patients showed any considerable psychiatric improvement. However, within this entire group seven patients showed a definite drop in the blood level of the heavier and more compact lipoprotein molecules (S_f 0-12). Three weeks after discontinuance of the drug, the content of these molecules in the blood had returned to the premedication level in only one of the seven patients. Six weeks after discontinuance, results were available on five patients. In only one of them was the amount of S_f 0-12 lipoprotein back to premedication level, although in the others it was showing a gradual return. Two of the nine patients showed no response. In the next lighter group of molecules (S_f 12-20) there was less change, although the same seven patients showed indications of a drop. Of these seven, five showed a return to premedication level within three weeks after termination of the

Read before the First Western Regional Meeting of the American Psychiatric Association, October, 1955.

From the Stockton State Hospital, Stockton.

Submitted December 2, 1955.

*These determinations and the processing of data obtained, as well as the lipoprotein studies on the geriatric patients receiving chlorpromazine were carried out by John Gofman, M.D., and Beverly Strisower, A.B., Department of Medical Physics, University of California.

drug. Two again showed no response. In the seven patients who showed a lipoprotein drop, blood cholesterol determinations during the period of medication showed a corresponding reduction. Again the two patients showing no response in the blood lipoprotein levels showed no appreciable change in blood cholesterol. It appeared further that the patients with higher initial blood lipoproteins and blood cholesterol levels showed a greater drop on medication.

Because of the small series, these results cannot be considered conclusive, but they do give a strong indication that reserpine affects the body's lipoprotein metabolism in some way not yet clearly understood. It indicates that reserpine has its strongest effects on the denser lipoprotein molecules (S_{10-12}). Other studies¹ indicate that desiccated thyroid also influences the level of these molecules although not apparently in the same manner. Further studies to give more conclusive information on this phenomenon are in preparation.

Chlorpromazine

Results with the use of chlorpromazine on newly admitted alcoholic patients, many of whom either were having or seemed about to have delirium tremens or alcoholic hallucinosis, did not vary substantially from the general trends indicated in the pharmaceutical circulars. Restlessness, apprehension, tremors and nausea and vomiting were reduced and on occasion eliminated with a dosage of 200 mg. to 400 mg. daily for periods varying from three days to two weeks depending upon the severity of symptoms. The need for other sedation seemed to be reduced. The confusion, disorientation and memory loss did not appear to be dramatically affected by the use of the drug. The transitory depressions that occur on recovery from an acute bout of alcoholism still appeared. Generally it seemed that the patient became more tranquil and less demanding, and that he tended to complain less of physical symptoms. Administration of chlorpromazine with other specific medication for concurrent illness appeared to be a desirable method of managing the patient during the early days of hospitalization.

In an attempt to evaluate the effects of chlorpromazine on a smaller scale with chronic geriatric patients, a group of ten men was selected. Seven of them were over and three under age 60. The dosage was gradually increased from 50 mg. daily to 400 mg. daily. The only untoward side effect observed was subclinical jaundice which developed in one of the younger patients. However, five of the patients over 60 years of age died within six weeks of starting the drug. These results were not at all in keeping with the observations in other groups in the

same hospital either with reserpine or chlorpromazine. An investigation of the causes of death indicated the following: Three patients showed some clinical signs of bronchopneumonia. In one this disease was confirmed at autopsy. One patient died in a diabetic coma, and at autopsy pulmonary edema with questionable pneumonia was noted. In the fifth case indications of mesenteric thrombosis and pronounced aortic atheromatosis were observed at postmortem examination.

In all five deaths the terminal illnesses appeared to be rather acute. Several physicians observing the patients were all impressed with their noncritical appearance in the terminal state. None of the patients had any of the usual indications of drug intolerance other than that of fever. There were no indications whatsoever that chlorpromazine was directly a cause of death, but conclusions drawn at the hospital from analysis of each case were that chlorpromazine lessened the clinical manifestations of the concurrent illnesses by its tranquilizing effect. The apprehension, anxiety and restlessness of the patient in distress were masked and distorted to such a degree that the medical staff was lulled into a false sense of security until the patient entered an irreversible terminal state.

Blood lipoprotein determinations were carried out in this group as well. No significant lowering of the blood lipoprotein or cholesterol levels was apparent in the short time the drug was administered. Further studies are indicated, since of necessity these findings are inconclusive.

DISCUSSION

In limited experience with the use of these drugs in newly admitted alcoholic patients and on the chronic geriatric services, it was observed that the tranquilizing effects of these drugs, while desirable, can be hazardous as well. The administration of these drugs to a large number of patients requires critical observations that are not within the realistic capabilities of the personnel of the usual grossly understaffed state hospital ward. It appears, therefore, that the time and effort saved in coping with the agitated, disturbed and demanding patient must be given over to closer observation. Again, when the withdrawn patients improve, additional time must be spent with them in carrying out a positive treatment program in which the tranquilizing drugs are but a part. This holds true in the alcoholic group as well. Although less time was spent in dealing with the individual's apprehension, more time had to be spent in observing him for side effects and more time had to be spent on some occasions in encouraging the patient to participate in the active treatment program.

CONCLUSIONS

Experiences with reserpine and chlorpromazine led to the following impressions:

Tranquilizing drugs are valuable adjuncts to therapy, but the serious hazards associated with them must not be underestimated on overcrowded, understaffed wards.

As long as we have before us the goal of suppression of symptoms and not the treatment of the sociobiological entity of the patient, we can claim only partial results and we must be prepared to treat recurrences of illness.

Reserpine, but not chlorpromazine, appears to cause a lowering of the same lipoprotein molecules in the blood as desiccated thyroid, but not in the same manner.

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Correction

In the article, "Surgical Treatment of Pulmonary Tuberculosis—A Decade of Change," by John S. Chambers, M.D., in the June 1956 issue of *CALIFORNIA MEDICINE*, an error was made in the printing of the summary. The phrase, "in favor of extraperiosteal plombage, particularly in older, poor risk patients," which appeared at the end of the third paragraph of the summary, should have been printed at the end of the fourth paragraph instead.

The third and fourth paragraphs should read:

Pneumoperitoneum has replaced other forms of temporary collapse. Pneumothorax, phrenic nerve interruption and pneumonolysis have been abandoned.

The use of permanent collapse measures as definitive treatment has decreased, thoracoplasty and extrapleural pneumothorax having been virtually abandoned in favor of extraperiosteal plombage, particularly in older, poor risk patients.

The Use of Blood at a Large Red Cross Center

An Evaluation of Various Aspects of Utilization

EUGENE P. ADASHEK, M.D., and WILLIAM H. ADASHEK, M.D., Los Angeles

THE FIRST HOSPITAL BLOOD BANK in this country was started in 1936 at the Cook County Hospital in Chicago. With the increased demand for blood each year since then and with the impetus from the experience of World War II, a natural development was the creation of Community Blood Centers to obtain and offer adequate blood supplies.

The Los Angeles Regional Blood Center, which conducts one of the largest community blood programs, is sponsored jointly by the Los Angeles County and the Orange County medical associations and the American National Red Cross (21 participating chapters of the Red Cross).

Located in a medical center having three medical schools, this program is fortunate in having pathologists, hematologists and internists with wide experience and interest in the blood field as active members of advisory committees of the county medical societies' Blood Center. With the technical supervision given by these advisors and with the strictest conformity to the regulations of the Biologics Division of the California State Health Department and the National Institutes of Health, it is felt that the Los Angeles Regional Blood Center is providing as safe a bottle of blood as is possible.

The yearly increase in collections for civilian use from 1946 through 1955 is shown in Table 1.

The continuous increase in the use of blood by civilian hospitals in the community coincided with

The authors are medical directors of the Los Angeles Regional Red Cross Blood Center.

Submitted February 10, 1956.

TABLE 1.—Yearly Increase in Collections of Blood for Civilian Use by the Los Angeles Regional Blood Center

Year	Pints Collected	For Civilian Use	To Department of Defense
1946	4,217	4,217	.....
1947	11,281	11,281	.....
1948	21,123	21,123	.....
1949	45,693	45,693	.....
1950	84,570	72,266	12,404
1951	197,432	93,315	104,117
1952	203,444	102,179	101,265
1953	196,359	110,305	86,054
1954	167,154	120,453	46,701
1955	144,291	133,274	11,017
Totals	1,075,664	714,106	361,558

• During the past ten years over 1,000,000 pints of blood have been collected at the Los Angeles Regional Red Cross Blood Center.

In addition to the progressive increase in the number of whole blood transfusions there has been a greater use of specific blood elements which results in purposeful and economical hemotherapy.

With the increased use of blood there has also been a growing awareness of transfusion reactions and dangers. Serious transfusion complications reported have been due to bacterial contamination, to hemolytic reactions, to homologous serum jaundice, and to a mistake in cross-matching.

Surgeons and anesthetists must pay strict attention to the use of blood since anesthesia masks severe hemolytic transfusion reactions.

At present there is no way of eliminating the danger of the transmission of virus disease (infectious hepatitis and homologous serum jaundice) in blood transfusions.

a tremendous growth of population in the area, but at the same time there was also a definite increase in the use of blood per hospital bed. In 1948 an average of four to five pints of blood was used annually per hospital bed; in 1955 the average was approximately ten pints.

The community blood center has also made available liquid plasma, frozen plasma and blood fractions. The distribution of these derivatives during the past three years is as follows:

Derivative	1953	1954	1955
Antihemophilic plasma (50 cc.)	312	1,826	4,658
Frozen plasma (250 cc.)	90	90	92
Liquid plasma (350 cc.)	1,877	441	355
Red blood cells (250 cc.)	804	710	877
Serum albumin (20 cc.)	139	77	108
Serum albumin (100 cc.)	250	553	948

The decreased use of liquid plasma is due to its restricted availability since most of the blood that is collected by the Red Cross and not used as whole blood is converted into blood fractions.

Fibrinogen was made available to the Los Angeles Red Cross Blood Center in the fall of 1953. Since that time, 24 units of it has been distributed for use in specific cases.

As knowledge of their uses and the availability of blood fractions develop, the trend will be for the use of the blood element specifically needed for the particular patient. In many instances, the administration of red cells is indicated for anemia and the giving of whole blood is at best wasteful and may even be harmful. A patient with bleeding due to afibrinogenemia will be given only fibrinogen; one with a deficiency in gamma globulin will receive only gamma globulin; one with nephrosis will be given only serum albumin; and one with hemophilia will receive only frozen plasma or antihemophilic plasma. This will result in purposeful and economical hemotherapy.

The use of blood as a therapeutic agent is still in its infancy. With the increased use of blood, resulting in the saving of many lives, there has also been a proportionate increase in transfusion reactions, accidents and iso-immunization problems. Recent reports estimate the mortality from blood transfusions to be approximately one death in 1,000 to 3,000 transfusions. Considering that about 3,500,000 transfusions are given yearly, the number of deaths would be about 1,750, which would make blood transfusion as important a cause of death as appendicitis or anesthesia.⁸

It is the policy of the Los Angeles Regional Blood Center to have the hospitals report their transfusion reactions to it each month. The milder allergic and pyrogenic reactions reported to the Blood Center are usually of minor consequence. To illustrate, below is a recapitulation of the experience in the past three years at the Children's Hospital, Los Angeles:

Year	No. Units Blood	Reactions	
		Number	Per Cent
1953	1,762	44	2.5
1954	1,749	57	3.26
1955	2,077	50	2.4

With care taken in the medical history of the donor, one rarely hears of the transmission of malaria or infectious diseases. In blood-banking there need not be too much concern with the transmission of syphilis, since the *Treponema pallidum* cannot survive 72 hours at 4° to 10°C. In the select group of donors who voluntarily donate blood through the Red Cross Regional Center, the proportion who have serologic tests positive for syphilis is comparatively small. Of 136,587 serologic tests performed in 1955, the number positive for syphilis was 212, or 0.15 per cent.

In spite of the use of disposable sterile equipment, bacteriological surveys quoted in other publications have shown as high a proportion as five to ten per cent of specimens of bank blood to be contaminated

with bacteria. The bacterial contaminants in most cases are Gram-positive, do not grow at refrigerator temperature and are nonpathogenic. Where pathogenic bacterial contamination has caused death, the organisms have been either of the *Pseudomonas* or of the *coli-aerogenes* groups.⁸ The Los Angeles Center has had reported to it one fatal reaction caused by bacterial contamination. The contamination was in a bottle of blood which had been sent from a blood center in another state.

The greatest number of deaths from blood transfusions are caused by the administration of incompatible blood. Noncompatible blood produces intravascular hemolysis resulting in chills, high fever, nausea, pain in the lumbar area and legs, and a sensation of substernal constriction and throbbing headache. The pulse rate increases, the respirations become labored and rapid, and signs of circulatory collapse may last from a few minutes to 24 hours. Jaundice and anuria of varied severity occur.

Under anesthesia these symptoms of hemolytic reactions are absent, but there may be an increase of blood oozing into the operative wound, and duskiness of the skin usually occurs. This increased hemorrhagic tendency has sometimes been referred to as exsanguination purpura.²

It is important to know the cause of the reaction. In suspected hemolytic or incompatibility reactions, the cause can be determined by checking the pre-transfusion and posttransfusion specimens of the patient's blood with the donor's blood.

The clinician or surgeon depends entirely on the laboratory for all the important tests to determine the compatibility and safety of the blood for the patient. Not only must he rely on the technical staff but also on many nontechnical personnel who carry the blood about the laboratory and to the wards or operating rooms.

One fatality reported to the Los Angeles Center occurred because of a mistake in cross-matching. Two pints of Group AB blood were administered to a Group B patient on whom a cesarean section was performed, resulting in the patient's death one week following the blood transfusions. Most fatal mistakes are really the result of human error, which is a matter of constant anxiety to anyone having the responsibility of running a blood bank.

Because of the dangers associated with blood transfusions, the use of blood should be restricted to circumstances in which there are direct, specific and definite indications.

A number of surgeons have become enthusiastic about giving blood during operation both to prevent possible shock and to replace blood that may be lost. This, combined with the anesthetist's desire to maintain a stable graph of blood pressure and pulse during operation, has in many instances resulted in

an unnecessary use of blood, with increased danger to the patient. All too frequently an anesthetist gives a blood transfusion to a patient undergoing a cholecystectomy, mastectomy, hysterectomy or other operative procedure associated with little blood loss, even though the preoperative blood determinations were within normal limits. Sometimes when the loss of blood at operation is not great the surgeon will sanction a transfusion rather than return blood to the laboratory.

As was pointed out previously, the special hazard of giving blood during anesthesia is that the usual signs of serious transfusion reactions are masked or suppressed. It is important that surgeons and anesthetists evaluate seriously the necessity of administering blood during anesthesia and limit the use of blood to those patients who have excessive loss.

Sometimes preoperatively and frequently postoperatively, a surgeon, following a natural desire to return a patient's blood count to normal as rapidly as possible, will administer blood when a similar result could be brought about with greater safety, although more slowly, by other means.

Overloading the circulation is another example of the misuse of blood. It was reported to the Blood Center that a 69-year-old woman with chronic anemia received six units of blood within 48 hours, resulting in congestive failure. If transfusion is indicated in patients of this type and in the aged, speed of administration should be reduced; and packed cells instead of whole blood may be used to great advantage.³

Because of large volume transfusions in major operations and the increased knowledge of electrolytes, the question of citrate intoxication has been raised. Citrate in excessive amounts lowers ionized calcium, which may result in tetany and cardiac dysfunction. Normally one is not too concerned, because of the considerable margin of safety. However, in patients with impaired liver function, citrate intoxication is possible and the administration of 10 cc. of 10 per cent calcium gluconate into another vein for each two bottles of transfused blood is wise.⁶

One of the most serious dangers is that of transmitting hepatitis to the patient. Reports indicate that this may occur in about one of 200 patients receiving transfusions of whole blood and that death may be caused by this factor in about one case in 6,000 transfusions.² Generally, the incidence of hepatitis following whole blood transfusion seems to be less than one per cent. This danger is greater, however, following transfusions of plasma^{5,6,8} although recent work has demonstrated that the virus of this disease will not survive in liquid plasma stored at room temperature for long periods (six to nine months).¹ For the past five years at the Los Angeles

Blood Center, irradiated pooled liquid plasma has been stored in that manner.

During World War II, in one careful follow-up study of 587 wounded soldiers in three Army hospitals, it was found that in 21.9 per cent of those who received blood and plasma, hepatitis with jaundice developed. This was in contrast to an incidence of 3.6 per cent among those who received whole blood only (5.6 units of whole blood per patient—hence the comparatively high incidence).⁷

The danger of virus hepatitis is universal. In Copenhagen in 1951, the incidence of virus hepatitis among 4,687 hospital patients, about one year after their discharge, was 1 per cent among those who had received whole blood transfusions; 3 to 4 per cent among those who had received serum transfusions; and 0.14 per cent among those in the control group. (There is always the possibility that the infection might have resulted from contaminated syringes, needles or blood lancets used in the hospital.)⁴

There are two virus agents concerned in the transmission of hepatitis. The two diseases produced clinically are much alike and from the pathological point of view are almost identical. One has been identified primarily with the clinical and epidemiological syndrome of infectious hepatitis and has an incubation period of approximately 20 to 40 days. The other, which has been associated with the homologous serum hepatitis syndrome, characteristically develops 60 to 150 days after blood transfusion.

Most studies have shown that an attack of one disease confers some immunity to that disease but not to the other. It has been demonstrated that gamma globulin may prevent epidemics of infectious hepatitis when given during the incubation period.

At the Los Angeles Regional Red Cross Blood Center, we have been concerned with the increased number of posttransfusion hepatitis cases—15 cases reported in 1954 and 34 cases in 1955. Only the serious cases are reported to the Center in the monthly reports from hospitals. Actually the incidence is many times as great as the reports would indicate.

Of particular importance is that volunteer donors are carefully screened, and when a donor's blood is implicated in a case of jaundice, a letter is written to the donor explaining the situation and asking if he had understood the original query concerning a history of jaundice. In only one such case was there implication of previous overt hepatitis: Upon review of his medical history the donor mentioned that he had been hospitalized while in the Army with several other patients and that the diagnosis may have been infectious hepatitis, although he was

not jaundiced and was not certain that the illness was hepatitis. However, on the chance that this donor had had infectious hepatitis, we asked him not to donate blood again. As to the cases of the many who have replied stating very definitely that there was no history of jaundice, the obvious conclusion is that there are asymptomatic carriers and that there is as yet no way of eliminating the hazard of virus disease transmission in blood transfusion.

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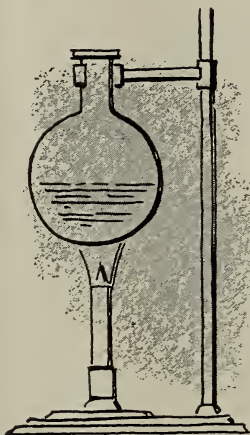
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Posterior Surgical Approach to the Rectum

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FREQUENTLY in the practice of proctology or general surgery a surgeon is confronted with benign lesions requiring excision at the 8 to 14 cm. level in the rectum. Small pedunculated polyps present no problem since they may be treated adequately through the sigmoidoscope with biopsy forceps, cautery or snare.

Presenting a different problem, however, are the large sessile adenomatous polyps which may be situated on the proximal surface of a mucosal fold or Houston valve and are therefore difficult to treat through the sigmoidoscope. In addition the not uncommon villous or papillary adenoma so frequently gives rise to adenocarcinoma that in the opinion of some observers wide surgical excision is mandatory.^{4,7,11,12,14} Only thus may the specimen and adjacent tissue be thoroughly examined to exclude early carcinoma.

These lesions situated at the 8 to 14 cm. level—a notorious no-man's land of surgical approach—are also relatively inaccessible through a laparotomy incision. Confronted with this problem recently, the authors pondered the idea of dealing with these lesions through a posterior rectal approach. After performing the procedure on several occasions with excellent results, we noted that Crowley and Davis⁵ recently reported a similar procedure. Since many surgeons may be unaware of this technique, however, for there are only occasional references to it in the literature, we felt that reemphasis of its advantages would be of definite value.

This approach to the rectum was used extensively by Kraske in 1885^{1,5,9} as the first step in an operation for rectal carcinoma which is now obsolete—posterior resection. He removed the carcinoma and performed an end to end anastomosis. Sacral colostomy was carried out if anastomosis was impossible.

Hochenegg in 1888^{2,8} used the same approach but modified Kraske's procedure by substituting a pull-through or invagination technique to avoid sacral colostomy. At about the same time, Allingham in England further modified the procedure in attempting to retain adequate sphincter control.⁶ Although the entire rectum with the internal sphincter was

• A posterior approach to the rectum that has been used by the authors and others recently in treating premalignant lesions at the 8 to 14 cm. level has a number of advantages.

Previous objections to it have been largely overcome by present-day methods of attaining a sterile operative field and also improvements in techniques of preoperative preparation and post-operative care.

There are several special situations in which this approach may theoretically be of value.

resected for carcinoma, the external sphincter was preserved.

Following these procedures for carcinoma there was about a 90 per cent recurrence rate, and a 70 per cent incidence of fistula formation. Incontinence and an unmanageable anal colostomy were also a frequent result. For these reasons the operations were enthusiastically abandoned when Miles introduced the abdominoperineal resection in 1908.^{9,10}

Although portions of these early operations have been revived from time to time in an effort to avoid colostomy, the posterior approach has rarely been mentioned and is almost never used today. Bevan in 1917³ and Vernon David in 1943⁶ reported procedures which enabled the surgeon to remove polyps low in the rectum. Their technique consisted of dividing the sphincter posteriorly and extending the rectal incision toward the coccyx so that the tumor could be grasped with a clamp and prolapsed into the operative field. This procedure was apparently used when adequate exposure could not be obtained by dilatation of the sphincter. It seems doubtful that polyps could easily be removed by this method above 10 to 12 cm.

PREPARATION AND TECHNIQUE

In the procedure as it has been done by the authors, the patient is given a low residue, high protein, high carbohydrate diet preoperatively. Four days before operation catharsis is accomplished with sodium phosphate. Neomycin, 1 gm., and streptomycin, 0.5 gm., both given orally every six hours, are added to the bowel preparation on the second preoperative day. Clear liquids are allowed by mouth the day before operation, and cleansing saline enemas are given at that time and immediately preoperatively.

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Submitted January 11, 1956.



Figure 1.—Draped operative field showing coccyx outlined by dotted line.

This regimen renders the colon free of feces. Cultures taken from the rectum at the time of operation have shown no bacterial growth.

The patient is placed in the Kraske position, and the buttocks strapped apart with tape. The lower drape is sutured to the posterior perianal skin to exclude the anal orifice from the operative field. A longitudinal midline skin incision is made from the fifth sacral vertebra down to the proximal edge of the external anal sphincter. If more room is required inferiorly, the skin incision may be extended to one side of the anus into the buttock, avoiding the sphincter.

The coccyx is dissected free of surrounding structures and readily disarticulated and removed. It is invariably necessary to place a suture-ligature about the middle sacral artery. An additional two or more centimeters of exposure of the rectum may be obtained by removing the fifth sacral vertebra without danger of injury to the anterior sacral nerves.

The levator ani muscles are divided in the midline, exposing the posterior rectal wall for the full length of the incision. The rectum is then longitudinally incised, and the polyp grasped and prolapsed through the proctotomy wound. Allowing at least one centimeter margin below the polyp, the lesion is excised and the resulting defect in the rectal wall closed with a double layer of continuous chromic catgut. The divided levator ani muscles are loosely approximated in the midline. The subcutaneous tissue is closed with catgut, and the skin with vertical mattress sutures of No. 32 steel wire. A Penrose drain, brought out through the lower pole of the wound, is cut in the shape of a Y, allowing a limb to lie on each side of the rectum away from the bowel suture line.

Postoperatively the patients are given a low residue diet, and streptomycin is continued for two days. The first bowel movement usually occurs on



Figure 2.—Skin incision has been made showing coccyx exposed above and levators below.

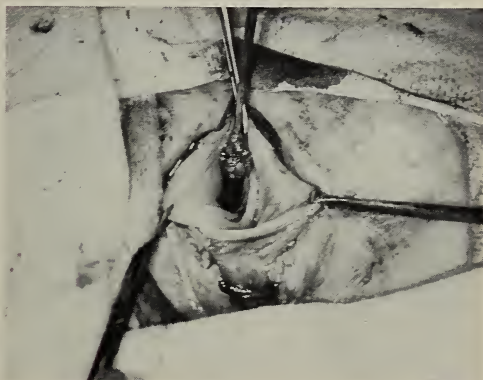


Figure 3.—The rectal polyp is prolapsed through the posterior proctotomy wound.

the third or fourth day, and the drain is removed on the fourth day. Skin sutures are removed on the sixth or seventh day. Bowel movements are aided by the administration of Metamucil® (psyllium hydrophilic mucilloid with dextrose).

The patients in whom the authors have done this procedure have had minimal postoperative discomfort. There has been no wound infection or fistula formation. Discharge of serous fluid through the drain wound stops a few days after the drain has been removed. None of the patients had difficulty with postoperative reflex spasm of the anal sphincter.

DISCUSSION

It is of interest to reconsider in the light of current surgical knowledge the reasons the original posterior approach procedures were abandoned.

With a recurrence rate of 90 per cent the operations were obviously inadequate in the treatment of

cancer. They have no place as curative procedures. It seems reasonable to assume, however, that in an occasional case in which only palliation is possible, by using the posterior approach to facilitate anastomosis a bleeding or partially obstructing tumor mass could be removed without resorting to palliative abdominoperineal resection.

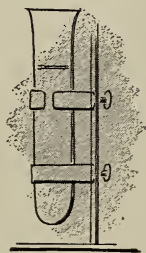
The original operations carried a 70 per cent incidence of fistula formation, but with current techniques of bowel preparation and the use of a drain in the wound, infection should occur infrequently. Infection did not occur in the cases in which the authors used the procedure or in those reported by David who routinely sectioned the anal sphincters.

Although incontinence was a frequent problem in the early operations for cancer, a simple incision and closure of the bowel wall with or without dividing the sphincter does not influence continence. It seems feasible to use this approach in performing the anastomosis in pull-through operations. This method should help to preserve continence, since it eliminates the eversion of the rectal stump and preserves the small nerve filaments to this portion of the rectum. Turrell¹³ suggested that if the lower six to seven centimeters of rectum is unmolested, continence should be retained, although the absence of the rectal ampulla may result in the loss of warning of impending defecation. It is obvious, however, that a cancer operation should never be compromised to save sphincter function.

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Primary Squamous Cell Carcinoma of the False Vocal Cord

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IN THE AUTHOR'S experience with cancer of the larynx, primary squamous cell carcinoma of the false vocal cord occurs in about three per cent of the cases examined. The false vocal cord is involved much more frequently by carcinomas that arise in close anatomical relation to it. For example, carcinoma arising near the petiolus of the epiglottis will often invade the false vocal cord directly. Further, carcinomas arising in the area of the aryepiglottic fold, over the arytenoid area and those arising in the ventricle may involve the false vocal cords by direct extension. The difficulty in assigning primary lesions to various anatomical locations in the larynx is well known and this is particularly true when the lesions are seen late in the course of the disease. The present discussion will be limited to squamous cell carcinomas whose primary site of origin is the false vocal cord as determined clinically as well as by gross and microscopic pathological examinations. The discussion will further be concerned with those lesions that arise primarily on the surface mucous membrane and with those that arise submucosally.

DIAGNOSIS

If the primary lesion of the false vocal cord is mucosal in origin, there is usually no difficulty in diagnosis either by indirect examination and biopsy or by direct examination and biopsy. Lesions that arise submucosally and continue to grow submucosally within the substance of the false vocal cord present difficulties in diagnosis. By their nature of growth there is no surface lesion and clinically the false vocal cord shows only evidence of tumescence upon either indirect or direct examination. The author's experience, submucosal deep biopsy and needle biopsy of the false vocal cord have been unsatisfactory. Tomography has given some indication of a swelling or mass in the region of the false vocal cord, but this method can be considered only an aid in diagnosis. Absolute diagnosis has been made by thyrotomy, excision of tissue under direct vision, and microscopic frozen section ex-

- Primary squamous cell carcinoma of the false vocal cord may arise on the surface mucosa or may arise beneath it and continue to grow deeply, presenting only a smooth tumescence of the area. These lesions may not cause hoarseness until late in the course of development. Diagnosis of submucosal primary lesions may present difficulty.

Widefield laryngectomy is recommended for small primary lesions of the surface mucosa of the false vocal cord. Such lesions do not show edema of the tissues or deep ulceration and do not cause limitation of motion of the false or true vocal cords.

For advanced lesions of the false vocal cord which arise on the surface mucosa and cause edema, ulceration and limitation of motion without enlargement of cervical nodes, widefield laryngectomy and elective block dissection of the neck should be done at the primary operation. Patients with such a primary lesion and metastasis to cervical lymph nodes, which are resectable, should be treated in a like manner.

Patients with submucosal primary squamous cell carcinoma of the false vocal cord should be treated with widefield laryngectomy and block dissection of the neck, whether or not palpable resectable lymph nodes are noted in the neck. Apparently these lesions metastasize early and widely.

amination. When thyrotomy is attempted for diagnosis in submucosal false vocal cord cancer, the surgical amphitheater should be set up so that definitive operation can be carried out at that time if biopsy is positive for cancer.

REPORTS OF CASES

I. *Early Surface Mucosal Lesions Arising on the False Vocal Cord*

CASE 1. A man 56 years of age, first observed January 21, 1953, had an indefinite history of hoarseness of many months' duration. Indirect examination by a mirror showed a fungating lesion arising on the anterior portion of the right false vocal cord. There was no limitation of motion of either the true or false vocal cords. Direct laryngoscopic examination confirmed these findings. Microscopic examination of tissue taken from the lesion showed squamous cell carcinoma. No palpable lymph nodes were present in the neck. On January 26, 1953, widefield laryngectomy was performed. There was no recurrence some three years later.

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II. Advanced and Far Advanced Surface Mucosal Lesions of the False Vocal Cord

CASE 2. A man aged 59 years was first observed January 8, 1951, with complaint of hoarseness and soreness of the throat for a period of at least two months. Indirect mirror examination of the larynx showed a fungating lesion arising from the anterior half of the left false vocal cord, extending anteriorly to the petiolus of the epiglottis. No palpable lymph nodes were present in the neck. Direct examination showed the lesion extending toward the ventricle, and toward the area of the epiglottic fold with beginning limitation of motion of the false vocal cord. The true vocal cord moved freely. Squamous cell carcinoma was proved by microscopic examination. On January 22, 1951, widefield laryngectomy was done. Enlargement of nodes in the left side of the neck was noted three months later. On May 24, 1951, a left radical neck dissection was done. From June 11, 1951, to July 13, 1951, the patient received a tumor dose of x-ray therapy to the right and left sides of the neck. In January 1953, enlarged firm nodes appeared in the right side of the neck and a right radical neck dissection was done. The patient died of cancer in December 1953.

CASE 3. A 62-year-old man, first observed April 26, 1950, complained of hoarseness for 11 months. No lymph nodes were palpable in the neck. The laryngeal airway was partially occluded, so tracheotomy was done. A biopsy done at the same time showed squamous cell carcinoma arising on the anterior portion of the right false vocal cord. In addition, there was pronounced edema, ulceration, and limitation of motion of this side of the larynx (Figure 1). Firm lymph nodes appeared on the right side of the neck and on November 21, 1950, a right radical neck dissection was done and post-operative x-ray therapy was given. The lesion progressed and on March 14, 1951, the patient died of rupture of the right common carotid artery.

CASE 4. A man 59 years of age was first seen on May 25, 1954, because of hoarseness for three months and pain under the right side of the lower jaw. Indirect mirror examination of the larynx showed a large fungating lesion involving the area of the right false vocal cord. The lesion was ulcerated and there was limitation of motion of the right side of the larynx. On May 27, 1954, direct laryngoscopic examination confirmed these findings and in addition showed the lesion to extend toward the petiolus of the epiglottis, toward the aryepiglottic fold and showed it to be overhanging the true vocal cord. On June 1, 1954, widefield laryngectomy and right block dissection of the neck were carried out in continuity as a one-stage procedure (Figure 2). Although no lymph nodes were palpable in the patient's neck, one of 22 lymph nodes from the jugular chain examined microscopically showed metastatic cancer. The patient's postoperative course was uneventful and he was living and well at the time of last report, 23 months following operation.



Figure 1



Figure 2

III. Primary Submucosal Squamous Cell Carcinoma of the False Vocal Cord

CASE 5. A man 47 years of age was first observed May 7, 1948, with complaint of hoarseness for two months. Indirect mirror examination of the larynx showed a round symmetrical swelling of the left false vocal cord. Further, there was a group of firm lymph nodes palpable in the deep cervical digastric area. They were freely movable. On May 18 and again on June 22, 1948, direct laryngoscopic examination confirmed the conditions noted upon mirror examination. Biopsy specimens were not obtained in either instance since there was no surface lesion. On July 8, 1948, direct laryngoscopy was

again done and material was aspirated from the area but diagnosis was not made from examination of it. On July 15, 1948, tissue was excised from the lymph nodes in the neck and they proved to have been invaded by squamous cell carcinoma. On July 23, 1948, no abnormality was noted in biopsy material from the nasopharynx. On July 28, 1948, thyrotomy was done. The false vocal cord on the left side was exposed and a specimen of deep submucosal tissue was excised. By using frozen section technique, squamous cell carcinoma was found in this specimen. On the same date a widefield laryngectomy and left radical neck dissection were performed. The patient's postoperative course was uneventful. In July 1950, a small pharyngeal lesion developed on the right side near the scarred area of excision. This proved to be squamous cell carcinoma again. On July 24, 1950, a right partial pharyngectomy and right radical neck dissection were done. The recurrence of cancer was found on the right side of the pharynx in the area where the epiglottis had been removed (former preepiglottic space area). The patient again made uneventful recovery. In November 1951, he had a severe fall, striking the back of his head. A subdural hematoma developed and in spite of treatment, including trephinations, the patient died on February 16, 1952. Postmortem examination showed no evidence of cancer.

CASE 6. A 57-year-old man was first seen in December 1949, with complaint of hoarseness for one year. Indirect mirror examination of the larynx showed a diffuse swelling of the left false vocal cord with no surface mucosal lesion. On December 29, 1949, direct laryngoscopy and biopsy were done. The biopsy specimen was unsatisfactory. On January 3, 1950, thyrotomy was done and a deep biopsy specimen showed squamous cell carcinoma. Definitive operation was not done then because preparations had not been made for it. On January 31, 1950, a widefield laryngectomy was performed. Following laryngectomy the patient was transferred elsewhere. On January 19, 1952, at the Veterans Administration Hospital in Los Angeles an attempt was made to do a block dissection of the left side of the neck because of metastatic carcinoma. Since all the involved lymph glands and cancer could not be removed from the neck, radon seeds were implanted into the area. The patient died February 18, 1953, of metastatic cancer to both lungs and to the lymph nodes of the mediastinum.

DISCUSSION OF CASES

Primary squamous cell carcinoma of the false vocal cord may arise either on the surface mucosa or beneath the surface mucosa.

If the diagnosis of carcinoma can be made early in the course of the disease in small surface lesions, and adequate surgical treatment instituted, it appears that the patient has the best chance for survival. However, since hoarseness is a relatively late

symptom, the patient does not usually appear for initial examination until the disease is far advanced. This was true in five of the six cases here reported.

In the three patients with advanced mucosal lesions (Cases 2, 3, and 4), there were no lymph nodes palpable in the neck at the time of original examination. In Cases 2 and 3, palpable nodes developed subsequent to widefield laryngectomy and the patient in Case 4 was found to have involvement of one lymph node when the nodes from the surgical specimen were sectioned microscopically. In this group only the patient in Case 4 was living and well at last report—23 months after widefield laryngectomy and elective block dissection.

It appears that elective block dissections should have been done in Cases 2 and 3 at the time of widefield laryngectomy. In fact, the patient in Case 2 had bilateral cervical lymph node metastasis during the course of his illness. It has been the author's experience that when lymph nodes declare themselves in the neck following widefield laryngectomy, the prognosis for arresting the disease is extremely poor. It appears the best chance for arrest of the disease in the advanced lesions is to combine elective block dissection of the neck with widefield laryngectomy at the original operation. In addition to early lymphatic spread, these mucosal false cord lesions may spread directly to the musculature of the false cord, to the ventricle, to the arytenoid area, to the aryepiglottic fold, to the petiolus of the epiglottis and preepiglottic space, and may involve thyroid and epiglottic cartilages.

Submucosal primary lesions of the false vocal cord present difficulties in diagnosis, as noted in Cases 5 and 6. Several attempts at biopsy failed and the diagnosis of cancer was made in each patient only after thyrotomy and biopsy under direct vision. Cervical lymph node invasion can be early. In fact in Case 5, metastasis to the deep jugular lymph nodes was present at the time of initial examination. Further, direct extension of these lesions is likely to occur to muscle, thyroid cartilage and the preepiglottic space. The two patients in this group had an indefinite history of hoarseness for many months before initial examination. Radical operation in Case 5 arrested the disease for four years. However, in Case 6 operation and irradiation did not control the cancer.

During some period of their illnesses, lymph node involvement was present in five of the six patients. It appears that primary lesions arising either on the surface mucosa or beneath it tend to metastasize readily to the cervical lymph nodes and that the metastasis may be unilateral or bilateral. Such metastasis denotes poor prognosis for arrest of the cancer.

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CASE REPORTS

Cobalt Tumor of the Thyroid Gland

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COBALT is reported useful in therapy of certain kinds of anemia.^{1, 2, 4, 9, 13, 17, 18} It may cause nausea, vomiting and loose stools, not severe enough to contraindicate its use. But goitrogenic effect, recently reported by Gross and Kriss with Spaet⁶ and with Carnes¹² may be more serious. Pronounced hyperplasia of the thyroid gland was noted histologically. Clinically hypothyroidism was observed in some cases along with lowered metabolic rate and lessened iodine uptake. The goitrogenic effect has since been observed by others.^{3, 10, 14} Even so, some manufacturers of hemotronics continue to recommend routine use of cobalt including during the latter part of gestation, without mentioning this goitrogenic effect.

Recently the authors removed a thyroid tumor (hyperplasia) which developed during iron and cobalt therapy in one of a pair of 8-month-old twins.

REPORT OF A CASE

In *Twin A*, a girl eight months old, a lump developed in the thyroid isthmus after two months of therapy for microcytic anemia with regular daily use of a cobalt-iron mixture (Roncovite®). The amount used daily was 1.2 ml., carrying about 20 mg. of cobalt. The hemoglobin value increased from 50 per cent up to 80 per cent during therapy but the mother had begun to notice the baby had difficulty with eating. In ten days a lump in the neck increased from about 2 cm. to 3 cm. in diameter and the patient was able to swallow only a few sips of liquid a day. Lugol's solution, 3 minims a day, did not make the mass recede.

In *Twin B*, a sister of *Twin A*, similar anemia had developed; the same therapy had been given and definite thyroid enlargement developed—diffuse but not great, and without nodule.

The twins were born six weeks prematurely. The mother had been seeking pregnancy for nine years. Conception occurred two months after diagnosis of hypothyroidism and the beginning of administration of desiccated thyroid, 60 mg. a day. *Twin B*,

the first born, presented normally, weighed 4 pounds 6 ounces and was always the more robust. *Twin A* weighed 3 pounds 8 ounces and was a breech presentation. She had frequent respiratory infections, for which antibiotics had been given. The twins both have type O, Rh (C De/Ce).

Upon examination, *Twin A* was observed to be undernourished (weight 15½ pounds), listless and sallow. The mass at the midline of the neck was rather firm. No other thyroid tissue could be felt. Offered water, the patient made rather exaggerated gulping motions, but swallowed only very small amounts. Breathing appeared unimpeded, although the mother had thought it noisy the night before.

Operation was done to remove the mass, which proved to be mostly thyroid isthmus. There was considerable tracheal compression. Sections taken from adjacent parts of the right and left lobes showed the same structure as the main mass—extreme hyperplasia throughout, and in some areas so great as to represent a papillary adenoma. No colloid was seen in any sections. The entire thyroid gland appeared about four times normal size, and it was extremely vascular. The stroma was dense in places, delicate in others (Figures 1 and 2).

Two days after operation, therapy with desiccated thyroid was started, 6.0 mg. a day, and administration of Lugol's solution was resumed. The patient did well. A month later, without consulting a physician, the mother began to give *Twin A* the cobalt-iron medication again, at the same time continuing the Lugol's solution and desiccated thyroid. For a while the baby continued to do well, but after a few weeks was taken to the family physician because of rapid thyroid enlargement, this time of the right lobe. She was again having trouble with eating. The tumor was spherical, firm, about 3 cm. in diameter. The patient had lost weight and become listless again.

Because of the similarity to the reported cases of thyroid hyperplasia during cobalt administration, the present cases were discussed with Dr. Ruth Gross,⁵ who also thought cobalt might be the cause. All medication was stopped and five days later the tumor was definitely smaller. In two weeks it was almost gone, and the patient was eating well again. Observed for two months after discontinuance of cobalt, she seemed normal. A recent test with ¹³¹I showed 32 per cent uptake in the neck at 24 hours.

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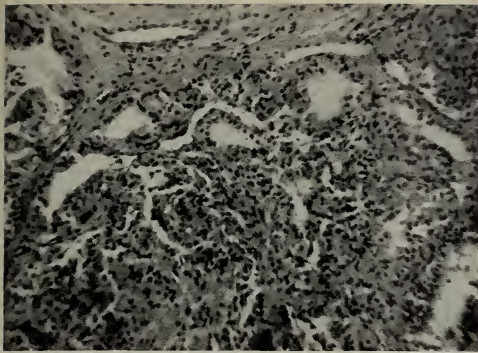


Figure 1.—Histological section ($\times 100$) of thyroid gland (Twin A) showing pronounced hyperplasia and absence of colloid.

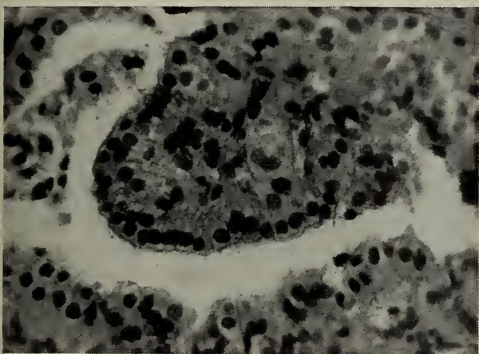


Figure 2.—High power photomicrograph ($\times 400$) of same specimen as shown in Figure 1.

Twin B had her medication stopped at the same time and there was a similar total regression of the (slight) thyroid enlargement, and a normal uptake of I^{131} (30 per cent at 24 hours) a month after discontinuance of therapy.

COMMENT

Thyroid tumor developing in association with cobalt administration has been reported infrequently, and only in children. Kriss, Carnes and Gross¹² reviewed autopsy material and noted one case in an adult. However, thyroid hyperplasia (from whatever cause) can cause death by suffocation. Klink¹¹ has reported ten such cases, five of them in infants that had received cobalt.

In the cases reported^{6, 12} the tumors developed over a number of weeks (as in the case herein) and diminution in iodine uptake occurred at the same time. (This could not be tested in the patients herein reported upon, because of the use of Lugol's solution.) In the other reported cases, the tumors regressed after discontinuance of cobalt therapy, as happened in the patients in the present case.

Anemia was present in the patients here reported upon, and this was true of the other cases in which a goitrogenic effect was reported. Jaimet and Thode⁸ reported upon 18 children who received cobalt without development of thyroid hyperplasia or decrease in I^{131} uptake. However—and perhaps this is significant—these children did not have anemia. One wonders if the susceptibility to the goitrogenic effect of cobalt is in some way related to certain types of anemia. Even though Holly⁷ reported upon a series of 78 women receiving cobalt during gestation without enlargement of the thyroid gland and without abnormality of the baby, the authors feel that not enough is known as yet of the effect of cobalt on the fetal thyroid gland to warrant recommending its use in pregnant women.

CONCLUSION

Cobalt by mouth can cause dangerous hyperplasia of the thyroid gland, at least in infants and children. This can occur even during medication with thyroid and iodine. It is not certain what anemia has to do with the individual susceptibility to this effect. The thyroid enlargement regresses after cessation of cobalt medication. Thyroid function may then be found clinically normal, with normal uptake of iodine. The hazards should be carefully considered before cobalt is given to infants, children or pregnant women.

SUMMARY

Twin sisters eight months old had thyroid enlargement while receiving iron-cobalt medication (Roncovite). The enlargement was a single nodule in one, and operation was done to relieve obstruction to swallowing. A second tumor appeared in a few weeks on resumption of the use of Roncovite, although the patient was receiving Lugol's solution and desiccated thyroid at the time. This disappeared without operation after all medication was stopped. The diffuse thyroid enlargement in the other twin also disappeared after discontinuance of medication. Neither twin appeared clinically hypothyroid. Both had normal uptake of I^{131} in the neck when last observed.

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Acute Urinary Retention in Pregnancy

Report of a Case

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INABILITY OF A PATIENT to evacuate the bladder adequately during pregnancy has been reported only in the situation of a retroverted uterus tightly wedged between the sacrum and pubis in such a manner that the uterine cervix forms a point of occluding pressure against the urethra and bladder neck. This complication of pregnancy has undoubtedly occurred many more times than the rather small number of reported instances in the medical literature would indicate. Nevertheless it is important to report a new instance of the condition because of the acute distress it causes, and for the light that can be cast on methods of treatment. Further, the fact that the condition might be confused with an abdominal condition requiring surgical intervention warrants the reporting of an additional case.

In the management of this problem, success has been reported with the use of two conservative procedures. Replacement of the uterus in the anterior

position, with or without the subsequent use of a pessary, resulted in success without interruption of pregnancy in seven patients reported upon by several observers.^{1,2,3}

In the present case, the acute emergency was abated without damage to the fetus, solely by vesical decompression and allowing the catheter to remain in place until the uterus spontaneously assumed the anteverted and elevated position as gestation progressed.

REPORT OF A CASE

The patient, a 28-year-old white woman, was first observed in the first trimester of pregnancy. She complained of severe, dull, cramping pain in the lower abdomen of 12 hours' duration and said she had not passed urine for some 12 to 18 hours. She had had an appendectomy some ten years previously. The patient had two children who were delivered without untoward difficulty after normal pregnancy, and she had had no abortions or premature terminations of pregnancy.

The first day of the last menstrual flow was April 23, 1954. The patient was 5 feet 2 inches tall and weighed 132 pounds. The body temperature was 99.0° F. The radial artery pulse rate was 86 per minute and the blood pressure was 120/70 mm. of mercury.

There was a cystocele and rectocele of minimal degree present. The uterine cervix was blue, and on it was an area of erosion. The uterus was retroverted and enlarged to the size consistent with three months' gestation. The bladder was greatly distended and tender.

A No. 16 (French calibration) catheter with a Foley type balloon of 5 cc. capacity was inserted into the bladder. In the succeeding few minutes 1,600 cc. of urine was drained from the bladder. The catheter balloon was then expanded with water, and the catheter was left in the bladder.

Upon examination of the pelvic organs it was observed that the uterus was retroverted and incarcerated in the pelvis. No attempt was made to replace the uterus. Sulfasoxazole, 0.5 gm. three times daily, was prescribed. Two weeks later there was a small amount of bleeding, apparently of uterine origin, but it ceased spontaneously. At that time the uterus was of the size consistent with three and a half months' gestation. Twenty-three days after the onset of the acute urinary retention the patient reported that simultaneously the catheter was extruded spontaneously and "something moved" and the abdomen felt "different." Upon examination, the uterus was observed to be of a size consistent with four to four and a half months' gestation, and it was completely out of the cul de sac of Douglas and was anteverted.

There was no further difficulty with the pregnancy, and on February 3, 1955, the patient was delivered of a normal baby.

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Submitted February 10, 1956.

DISCUSSION

Burdon and co-workers¹ noted that earlier instances of this disturbance of pregnancy were recorded in 1877 by Smellie and in 1912 by Crabtree. Burdon reported the case of a primipara 36 years of age in which successful treatment consisted of elevating the uterus and supporting it with a pessary.

During gestation the capacity of the bladder increases and the tonicity decreases. When mechanical pressure is exerted on the urethra and bladder neck, acute urinary retention occurs. Seidner and co-workers² expressed the belief this happens fairly frequently. They noted the five such attacks in gravid women, and in none of those cases were there previous symptoms referable to the urinary tract. In all the bladder was palpated as a clearly rounded mass from which the uterus was distinctly separate. The uterine cervix was high under the symphysis pubis and was pressed against the neck of the bladder. Spring and Hymes³ conjectured that the condition might come about from eccentric hypertrophy in which the anterior wall distends more rapidly than the posterior wall, drawing the organ upward. They reported successful treatment of the condition in a 29-year-old multipara by decompression of the bladder and manual replacement of the uterus.

The usual course in pregnancy when the uterus is retroverted and incarcerated is spontaneous elevation of the organ from the true pelvis. This is brought about by expansion of the uterus until it no longer can be contained within its limited space. This usually presents no problem even in the more severe cases of retroversion where iatrogenic efforts are of no assistance, such as severe binding inflammatory adhesions and endometriosis. This consideration being held tenable, no other course than continuous vesical decompression was considered in the case here reported, although elevation of the uterus has been reported effective in other cases. The use of undue force in elevation of an incarcerated uterus could lead to abortion.

SUMMARY

Acute urinary retention was caused by pressure of the cervix of a retroverted, gravid uterus. The condition was successfully treated by placement of a retention catheter in the bladder until the uterus spontaneously elevated itself out of the true pelvis.

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Fractured Styloid Process of the Temporal Bone

Report of a Case

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RARELY, during operation for the removal of the palatine tonsils the styloid process is fractured. In the literature are several reports of symptoms arising, following tonsillectomy, from an elongated styloid process. Fracture of a styloid process of normal length produces similar complaints. The symptom complex described resembles that of glossopharyngeal neuralgia. Chief complaints include painful swallowing and a persistent pain in the palatine tonsil area, radiating to the ear, to the same side of the face, to the clavicle and the shoulder and sometimes into the chest. Physicians may do well to keep this condition in mind, for the vagueness of the complaints is such as to turn suspicion towards psychoneurosis.

The following case is reported because a number of physicians, including several otolaryngologists, examined and treated the patient but apparently were unaware of the underlying pathologic condition.

A white male bus driver, 35 years of age, was first observed by one of the authors on February 10, 1955, with complaint of persistent pain in the throat that had begun within an hour following tonsillectomy done June 8, 1954. While yet in the hospital, he noted pain in the right side of the throat and on the right side of the face. He said his right ear was painful, had "a plugged feeling." The pain radiated to the right side of the neck and the right shoulder.

The patient said that ever since the operation he slept poorly because he always had the feeling that something was left within the right tonsil area. He had seen several general physicians, several otolaryngologists, two neurosurgeons and a psychiatrist. Three of these physicians had performed a total of five additional operations on the right side of his throat. The operations consisted of removal of lymphoid tissue on the surface of the tongue and removal of small islands of lymphoid tissue within the tonsillar fossa. Operations gave relief for approximately two days but always the symptoms recurred.

The patient, when examined was trembling and of anxious mien. Retraction of the right eardrum and prominence of the short process of the malleus were noted. The eardrum was intact with no scarring and no evidence of infection. The left eardrum was normal, with all landmarks visible. There was a good airway through the nose. Within the throat the tonsils were completely enucleated, and no lymphoid tissue was visible within the fossae. The patient complained of tenderness when a tongue depressor was pressed against the right side of the tongue posteriorly. No abnormality was noted on

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mirror examination of the postnasal space. Upon indirect laryngoscopy the vocal cords were observed to move equally and no lesions were seen. An audiogram demonstrated an average hearing loss in the right ear of 10 decibels within the conversational range. The impairment was of conduction type. In the left ear all tones were heard above the zero base level. There was considerable loss of hearing in the frequencies above the 4,000 per second, worse within the left ear.

Because of the anxiety of the patient and the seeming exaggeration of symptoms, he was referred to a psychiatrist (W.G.B.). The psychiatrist, after talking with the patient for two hours, felt that although he was psychoneurotic he had organic pain that was not amenable to psychiatric therapy. Therefore he was referred back (to M.W.S.) on March 16, 1955. The patient persistently complained of the same symptoms as before. At this visit, hyperemia of the vessels along the malleus of the right eardrum was noted. Procaine, 1 cc., was injected within the tender area and the patient was not certain he had relief immediately. At the following visit two days later, he said that the pain had disappeared for approximately two hours and that the pain then was less but still present in the same location. He returned March 28, 1955, stating that the pain was severe again and that he was thoroughly discouraged.

He was referred to a roentgenologist for x-rays of the styloid process. The report was as follows: "The right and left styloid process are of equal length. Both are 2.3 centimeters in length (uncorrected magnification), but the right styloid process shows a discontinuity in its uppermost part with the temporal bone so that one may be reasonably sure it has been fractured at this site in the past without subsequent bony union" (see Figure 1).

On April 19, 1955, with the patient under general anesthesia an incision was made in the right tonsillar fossa and the styloid process was noted to be freely movable within the fossa, confirming the x-ray report. It was removed. After operation the patient said that the right ear still felt plugged and that his throat was sore and he had some pain in the chest. However, on May 4, 1955, he said he was much better and had returned to work. From then on he was asymptomatic.

Failure to recognize the symptom complex of a fractured styloid process in this patient caused considerable needless therapy and pain.

The styloid process is a slender cylindrical bone fused with the temporal bone anterior to the stylo-mastoid foramen. It consists of a basal segment, which is hidden by the tympanic plate, and a longer segment whose tip is continuous with the stylohyoid ligament. The ligament may become ossified, giving rise to an elongated process capable of provoking symptoms of a glossopharyngeal neuralgia.

Muscle attachments to the styloid process consist of the stylopharyngeus, the stylohyoid and the styloglossus muscles. Pain during deglutition in case of

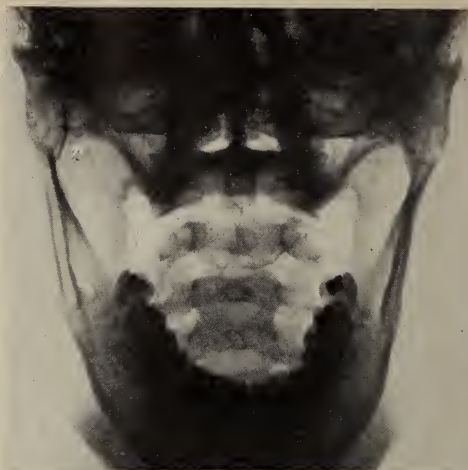


Figure 1.—Discontinuity of uppermost part of right styloid process with temporal bone.

fracture of the process is probably caused by a direct pull exerted by these muscles on the broken bone. Injury to the glossopharyngeal nerve with irritation may occur. Roentgenologically, the line of fracture is very easy to demonstrate.

A disturbance in the swallowing act, especially following tonsillectomy, should make one suspicious of a fractured styloid process. Pain is localized within the tonsil fossa or deep in the neck near the base of the tongue. The pain often radiates to the face and ear on the same side and to the clavicle, shoulder and chest. Pain is worse with swallowing and the patient has a sensation of a foreign body in the throat. In the case herein reported the patient also complained of stuffiness of the ear and a slight loss of hearing (which was confirmed) which completely remitted with the other symptoms. A persistent cough may be present and there may be a choking or a burning sensation in the throat.

Oftentimes the styloid process can be palpated through the tonsillar fossa, with an exaggeration of the symptoms. Treatment is surgical removal, preferably through the intraoral route.

SUMMARY

A patient with fractured styloid process of the temporal bone following tonsillectomy had persistent pain and some loss of hearing. He was examined by numerous physicians who performed five subsequent operations without relief. A psychiatrist said the patient's pain was, indeed, organic. X-ray examination of the styloid process revealed a fracture of the proximal portion. Complete symptomatic relief resulted from intraoral surgical removal of the styloid process.

1020 McKinley, Fresno (Simmons).

1. Eagle, W. W.: Symptomatic elongated styloid process, *Arch. Oto-laryng.*, 49:490, May 1949.
2. Johnson, F.: The Elongated Styloid Process, *Trans. of the Pac. Coast Oto-Oph. Soc.*, 1950.

EDITORIAL

Radiation Exposure and Common Sense

REPORTS OF A STUDY on the biological effects of atomic radiation were made public by the National Academy of Sciences at a press conference on June 12, 1956. The conclusions of the six committees studying the problem indicated in general that the peacetime developments of atomic energy and nuclear weapons can proceed without endangering mankind, provided adequate precautions are taken. The study group included committees on genetics, pathology, agriculture, oceanography, meteorology, and disposal of radioactive wastes; it numbered over 100 scientists.²

The report of the genetics committee received considerable press attention and revived understandable concern regarding permissible exposure to diagnostic x-rays. It may, therefore, be timely to review some aspects of radiation exposures in diagnostic medical procedures.

For many generations mankind has been exposed to cosmic and gamma rays from natural radioactive sources amounting to lifetime doses of 10 to 15 r, total body. The daily dosage from such sources is perhaps 0.3 mr. (milliroentgens). Many persons wear wrist watches with radioactive material on the dial; when such a watch is worn next to the skin, it has been calculated that a small zone receives, perhaps, 100 mr. per day. Certain types of eyeglasses contain uranium-bearing glass; the ocular dose from such spectacles has been calculated as between 1 and 8 mr. per hour. Despite these facts, it is well known that many citizens reach the ripe age of 90 without evidence of gonadal or bone marrow disturbances. There are regular reports of proud male parentage beyond the age of 90 years. There are no records of serious skin or ocular damage from the natural radioactive hazards above mentioned.

In recent years, x-ray apparatus for medical and

industrial uses has become widely distributed. Artificial radioactive materials have been prepared in enormous amounts and are being utilized for experimental purposes by many scientists. The dosage received from such sources varies widely. In order to make even a rough estimate of the dosage received by a given person, the observer must have several facts at his disposal, including the total calculated tissue dose, the size or volume of the area dosed, and the time required to receive that dose. For example, a single dose of 600 r of x- or gamma rays delivered to an area 2 cm. in diameter in one day will not produce any significant skin reaction and will not be associated with deleterious effects when applied over most areas of the body. On the other hand, a single dose of 600 r, delivered to an area 200 cm. in diameter, in one day, would be lethal for some persons and would cause serious radiation sickness in others. In the radiological cure of many types of cancer (cancer of the cervix, for example) it has been repeatedly observed that a tissue dose of 6,000 r to an area approximately 7 cm. in diameter delivered in about 30 days' time is tolerable, and that the adjacent normal tissues can recover in a fashion consistent with long survival. There are thousands of patients on record so cured for periods longer than twenty years.

The maximum permissible total body dose of radiation for persons working with radiation is set at approximately 300 mr. (0.3 r) per week, or about 60 mr. per working day. This dose presupposes irradiation extending over a working lifetime of about 40 years. The permissible dose for exposures to extremities, below the elbows or knees, is some five times the total body dose.

Codes do not limit the amount of radiation that a physician may use in diagnosis or treatment for the good of the patient exposed. Nevertheless, a

conscientious physician will attempt not to injure his patient in diagnostic investigation.

The dose which causes mutations in subsequent generations is not known. However, it is to be noted that there have been over two full generations since the discovery of x-rays and at least one since their fairly widespread use, yet it seems apparent that the mutation rate has not undergone a striking or sudden increase to date. The incidence of leukemia in radiologists is higher than in other physicians, but most radiologists do in fact die of other causes. At one large midwestern medical clinic there are some radiologists in active practice who have performed over 50,000 gastrointestinal fluoroscopic examinations. These careful workers are in good health.

The amounts of radiation received by the patient in diagnostic radiology will vary with the type of examination requested, the skill of the examiner, and the thickness of the patient. Again, one must think in terms of roentgens-time-area. In prolonged fluoroscopic examination of a small baby of average thickness—about 12 cm.—20 r may be delivered to virtually the entire body at one sitting. On the other hand, a comparable examination of a patient 6 feet tall with thickness of 24 cm. will result in a considerably smaller biologic dose, since only a small part of the body will be irradiated and since the thickness of the tissues will result in a smaller amount reaching important deep structures.

The harmful effects of radiation are commonly considered in terms of the genetic effect on the gonads; the thoughtful physician also considers the effects on bone marrow, skin, ocular lens and other structures. He knows that the effect on such tissues is enhanced when examinations are repeated at frequent intervals and especially when the examiner has no idea as to the output of the machines he is using. He also knows that the value of properly done x-ray studies—when indicated—far outweighs any theoretical damage to the patient.

In general, the output of modern diagnostic units can be made quite safe by the use of filters (for example 2 mm. aluminum), cones, a sensible minimum of exposures, and adequate skill in making each exposure so that needless repetition is avoided. It is estimated that in the making of an x-ray film of the pelvis the skin over the scrotum of an adult male receives approximately 1 r, measured in air, when the radiation is filtered through 2 mm. aluminum. The ovary of an average adult female receives perhaps 0.3 r under such conditions.¹

It has been calculated that in *properly made* anterior examinations of the chest, the skin in the center of the x-ray beam receives about 0.03 r. (However, with the average photoroentgen or minifilm unit, the dose is about eight times as much.) In examinations of the gastrointestinal tract, the

total dose received by the skin nearest the tube is often about 14 r; in barium enema examinations, about 5 r; and in gallbladder studies about 6 r. The ovarian doses received in such studies are about 0.8, 1.2 and 0.03 r respectively.

As far as the gonads are concerned, it is advisable to shield them in young persons whenever possible. Leaded rubber, available in radiologists' offices and departments, with a protective value equal to 1.5 mm. of lead, may be utilized. This is applicable especially to male patients, since in females its use might mask the presence of stones, neoplasm or other disturbance for which the examination itself was required.

Considerable radiation is received by many patients as a result of fluoroscopy. Indeed, one physician reported some years ago that in making fluoroscopic examinations of the chest, he discovered that his patients were receiving between 33 and 134 r (on the skin) per fluoroscopy. By increasing the distance between the tube and the table and adding a filter he was able to reduce this output enormously. Sensible advice for fluoroscopists might be summarized as follows:

Use the correct kilovoltage (about 85), low milliamperage (not more than 3), safe tube-table distance (preferably at least 18 inches), a filter of 2 mm. aluminum, and a beam size not over 4 inches square for most of the examination. Such factors will result in a roentgen output at the top of the fluoroscope of about 5 r per minute or less. With skill, dexterity and speed, the patient's skin will frequently receive less than 5 r per examination.

The personal physician is in a key position to reduce unnecessary procedures involving radiation. He can ask himself if x-ray examination is essential for reaching a diagnosis in the patient in question, and, if so, how it can be done most efficiently and with least disturbance to the patient's gonads or bone marrow. When in doubt, he can consult his radiologist and, if necessary, refer to some of the official publications dealing with the important question of radiation protection.³ Correct diagnosis is the cornerstone of scientific medicine; reasonable and adequate use of diagnostic radiology is an important component of this stone. When an examination is called for, let us continue to have it done skillfully and safely . . . the first time.

L. HENRY GARLAND, M.D.

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3. X-ray Protection, Handbook 60; Radium and Cobalt Protection, Handbook 54, National Bureau of Standards, U. S. Dept. of Commerce, Washington, D. C.

Advertising Standards

IN THE ever-expanding field of pharmaceutical and biological advance, physicians find themselves confronted with a growing number of products offered by a growing number of producers. The physician today is constantly faced with the necessity of knowing just what he is administering or prescribing and just what its merits or dangers may be.

With the expanded competition in the pharmaceutical field has come a new era in pharmaceutical advertising. Each producer is naturally jealous of his own products and anxious to protect his own investment in research and in producing an item on which he is proud to place his own trade name. He is, in short, eager to sell his product once he himself is convinced it is a good one. Through his advertising he tries to transmit some of his enthusiasm to the physicians he can hope will prescribe or use what he produces. Even in his enthusiasm, however, he cannot overlook that his ultimate well-being depends upon the well-being of the patients who use his products. In this his interests are at one with those of physicians. But physicians traditionally pose caution against enthusiasm. They must have a satisfactory appraisal of anything they use in the treatment of a patient. In such circumstances a medical group that will examine medical advertising with a view to providing the greatest benefit and protection to the patient, can do a valuable service both to physicians and to the makers and vendors of products offered for use in the treatment of disease.

The Advertising Committee of the California Medical Association, which reviews the advertising offered for CALIFORNIA MEDICINE, has now done such screening for almost ten years and has established its own set of regulations to govern the acceptability of advertising copy. These regulations require qualitative and quantitative analysis of all products, an ethical advertising policy by the vendor, clean competitive conditions between advertisers and the sound use of quotations from published papers. Quotations taken out of context or not reflecting the true findings of the article quoted are not acceptable.

In addition, the committee's rules state that "sweeping superlatives and unfair comparisons will not be allowed." The rules also provide that "extravagantly worded copy is subject to revision or rejection."

By and large, the establishment of these rules and their strict enforcement by the Advertising Committee have met with a most favorable response from pharmaceutical producers and their advertising agencies. Differences of opinion or of interpretation have arisen in some cases, and a few advertisers

have cancelled their schedules completely rather than meet the committee's requirements. However, CALIFORNIA MEDICINE has continued to increase its advertising volume and to present to its readers a carefully selected list of ethical advertisers of efficacious products.

Behind this situation lies a history dating back some 15 years. At that time *California and Western Medicine* was a member of a cooperative group of state medical journals that pooled their selling efforts in one agency which operated out of A.M.A. offices in Chicago. Advertising regulations were set by the A.M.A. on the basis of acceptance of products by the Council on Pharmacy and Chemistry. That Council, in turn, maintained a stringent set of rules, some of which prohibited the acceptance of compounds or mixtures and eliminated consideration of many brand-named products.

Because of such restrictions and the fact that many items which were useful in everyday therapy were eliminated from advertising consideration, officers of the California Medical Association voted to withdraw their journal from the state journal group. Thereafter, advertising sales for the California journal became the responsibility of the Association itself.

The C.M.A. Council immediately authorized the formation of an Advertising Committee. This group, probably never heard of by most C.M.A. members, meets more frequently than any other committee in the Association. For months at a time this committee meets once a week to consider the advertising presented for review.

The work of the Advertising Committee has been increased in the past year because of the discontinuance of the A.M.A. seals of acceptance. When these seals were in use, the local committee could be assured of the earlier investigation of the advertised product and could count upon the accuracy of the A.M.A. findings. Now, the California committee can no longer follow this procedure but must on its own look into all claims made for any item.

Discontinuance of the A.M.A. seals appears to have led some producers or their agencies into more extravagant language and claims in the presentation of their products. The California committee has been quick to recognize the possible dangers in such departures and has insisted on maintaining its own standards rather than abide by those of others. Now and then advertising copy accepted by national, state and county journals and bulletins has been rejected for CALIFORNIA MEDICINE. This is not intended as aspersion on other medical publications but simply to note how conditions may change over a period of years when pharmaceutical advances are everyday occurrences.

In an effort to provide high advertising standards throughout California, the C.M.A. House of Delegates last May adopted a resolution calling on all county societies to observe sound regulations in their own bulletin advertising. A similar resolution, taken to the A.M.A. House of Delegates, met a favorable response there. Thus all state and county publications will soon be put on notice that advertising standards must be maintained at a high level.

The most frequent causes for the Advertising Committee to question copy submitted by advertisers are the absence of a formula and the use of sweeping language in claims for therapeutic efficacy. Over the years the committee has developed an aversion to superlatives and absolutes. At the same time, it recognizes that enthusiasm is the life blood of the advertising business. A fair and sound resolution of this divergence of interests is sought by the committee members.

As to the appearance of qualitative and quantitative formulas, the committee believes that every physician should know what he is prescribing or administering. If there are contraindications to the use of a product for any patient, the physician

should have the chance to learn about it before he embarks on therapy which might bring adverse effects. Where a product might present the danger of side effects or other untoward results, the committee wants a caution to appear as part of the advertising promotion.

These requirements are all designed to protect the patient and to assure the physician readers of CALIFORNIA MEDICINE of a sound evaluation of the items presented in the journal's advertising pages.

It takes a great deal of time and effort to study all advertising offered by the ever-growing number of pharmaceutical producers, but the satisfaction gained in assuming a rightful responsibility and discharging it properly should provide an offsetting benefit.

California physicians may well be proud of the thorough and painstaking work of their Advertising Committee and its devoted members. Less immediately, perhaps, but cogently nevertheless, the committee serves the advertiser too: Carefully descriptive advertising helps the physician to help the patient—and it is in help to the patient that the advertiser's fortunes lie.



NOTICES & REPORTS

Transactions of the House of Delegates

Los Angeles, April 29 to May 2, 1956

IN LIEU OF REPORTING the entire transcript of the sessions of the House of Delegates of the California Medical Association in its 1956 Annual Session, the transactions of the House are given here in abstract form.

The resolutions introduced in the House of Delegates are printed in full under three categories: (1) Those adopted as introduced or as amended, (2) those referred to the Council of the Association, and (3) those not adopted. In each instance pertinent comments from the reports of reference committees as adopted by the House of Delegates are appended.

A complete transcript of all proceedings, taken verbatim by a court reporter, is on file in the office of the Association and available for inspection by any member.

RESOLUTIONS ADOPTED

RESOLUTION No. 1

Introduced by: C.M.A. Council.

Subject: Commendation to Dwight H. Murray, M.D.

WHEREAS, The California Medical Association's own beloved and respected Dr. Dwight H. Murray of Napa, California, currently President-Elect of the American Medical Association, will soon become the President of the American Medical Association; and

WHEREAS, Dr. Murray has attained this high honor because of his life-long devotion to the ever-advancing standard of medical care for the people of his state and nation and the welfare of his conferees; now, therefore, be it

Resolved, That the California Medical Association, duly meeting in convention convey to Dr.

Murray our every best wish for a year of successful leadership for American medicine; and be it further

Resolved, That this resolution be suitably printed and presented to our distinguished member, Dr. Dwight H. Murray.

RESOLUTION No. 2

Introduced by: C.M.A. Council.

Subject: Commendation of Physicians in Flood Areas.

WHEREAS, Residents of many northern California counties suffered severe hardships in the recent floods; and

WHEREAS, Physicians from the stricken areas and the surrounding counties, often at the risk of their own lives, provided 'round the clock medical care; now, therefore, be it

Resolved, That the members of the California Medical Association salute the excellent efforts of their colleagues and nominate them the "Doctors of the Year" for 1956.

(Reference Committee No. 3 noted in its report: The Council wishes to commend physicians in the flood areas for their outstanding work.)

DONALD A. CHARNOCK, M.D.	President
FRANK A. MacDONALD, M.D.	President-Elect
JAMES C. DOYLE, M.D.	Speaker
J. NORMAN O'NEILL, M.D.	Vice-Speaker
DONALD D. LUM, M.D.	Council Chairman
ALBERT C. DANIELS, M.D.	Secretary-Treasurer
IVAN C. HERON, M.D.	Chairman, Executive Committee
DWIGHT L. WILBUR, M.D.	Editor
JOHN HUNTON	Executive Secretary

General Office, 450 Sutter Street, San Francisco 8

ED CLANCY Director of Public Relations

Southern California Office:

417 South Hill Street, Los Angeles 13 • Phone MADison 6-0683

RESOLUTION No. 3

Introduced by: C.M.A. Council.

Subject: California State Alcoholic Rehabilitation Commission.

WHEREAS, The State of California has established a program for the study for control of alcoholism; and

WHEREAS, A state Alcoholic Rehabilitation Commission has been established and given adequate financing; and

WHEREAS, The program of this Commission is now about to be determined and put into operation; now, therefore, be it

Resolved, That the California Medical Association advise the California State Alcoholic Rehabilitation Commission of the Association's belief that alcoholism is a medical problem which demands professional skills and that the Association is prepared to lend every assistance toward the solution of this serious moral, physical and economic problem.

(Reference Committee No. 3 noted in its report: The Council offers assistance to the California State Alcoholic Rehabilitation Commission in its program for the study and control of alcoholism.)

RESOLUTION No. 4

Introduced by: C.M.A. Council.

Subject: California Physicians' Insurance Corp.

WHEREAS, California Physicians' Insurance Corp. is completely organized and has been authorized by the Insurance Commissioner of the State of California to sell certain policies of indemnity insurance applicable to the costs of medical, surgical and hospital care; and

WHEREAS, Good business practice suggests the wisdom of offering such policies for sale on a statewide basis; now, therefore, be it

Resolved, That the officers and directors of California Physicians' Insurance Corp. be requested to prepare and offer for sale, throughout the area in which the corporation is authorized to write insurance, such policies of indemnity insurance as best serve the needs of the public.

(The C.P.S. Reference Committee noted in its report: Your committee was fortunate in having before it Dr. Hollis L. Carey, chairman of the Commission on Medical Services, who reported that this resolution was unanimously approved by the Commission and subsequently approved by the C.M.A. Council, for the purpose of making available on a state-wide basis policies of indemnity insurance through California Physicians' Insurance Corporation.)

RESOLUTION No. 5

Introduced by: C.M.A. Council.

Subject: Publication of House of Delegates Proceedings.

WHEREAS, It has been customary for the California Medical Association to publish in full the transcript of each meeting of its House of Delegates; and

WHEREAS, Such publication involves a long period of time to receive, edit and prepare the transcript for publication and to distribute the printed copies of CALIFORNIA MEDICINE; and

WHEREAS, It would be possible to publish with a minimum of delay a digest of the positive actions taken by the House of Delegates, including resolutions adopted and the results of elections; now, therefore, be it

Resolved, That the House of Delegates request the Council to develop a more rapid form of publication of the transactions.

(Reference Committee No. 3 noted in its report: The Council wishes to avoid delay in the publication of the proceedings of the House of Delegates by publishing a digest of the proceedings. To facilitate action by the Council . . . [the committee offered an amendment which was adopted, making the resolution read as above].)

RESOLUTION No. 7

Introduced by: A. A. Kirchner.

Representing: Los Angeles County.

Subject: Telephone Listings.

WHEREAS, The population of the State of California continues its phenomenal growth; and

WHEREAS, Many of the new residents of the state depend upon the telephone directories for the establishment and maintenance of medical contacts; and

WHEREAS, The present style of listing in the classified telephone directories of medical doctors as "Physicians and Surgeons" is confusing with other licensed doctors in the State of California; and

WHEREAS, For the benefit of the residents of the State of California and for the elimination of confusion, it would be for the best interests of all concerned that those persons holding an M.D. degree be listed as "Doctors of Medicine, M.D."; now, therefore, be it

Resolved, That the California Medical Association, acting through this House of Delegates, request the Pacific Telephone and Telegraph Company and all other allied associations or other telephone systems in the State of California that hereafter they will list all licensed physicians and surgeons holding an unrevoked medical doctor's degree in the various telephone directories, including those known as "classified directories" as "Doctors of Medicine, M.D."; and be it further

Resolved, That the secretary of the California Medical Association be instructed to circulate this

resolution to all telephone companies doing business within the State of California.

(Reference Committee No. 3 noted in its report: This resolution is intended to avoid the confusion of present listings of Doctors of Medicine in the classified sections of telephone directories.)

RESOLUTION No. 8

Introduced by: Frederic Ewens.

Representing: Southwest Branch, Los Angeles County Medical Association.

Subject: Better Distribution of Salk Vaccine.

WHEREAS, Members of this branch of the Los Angeles County Medical Association have found it impossible to obtain any polio vaccine since January, 1956, from either private sources or from the Public Health Department; and

WHEREAS, Investigation of this problem has revealed that large quantities of the vaccine have been manufactured; and

WHEREAS, Families have been demanding polio vaccine for their children under the age of 15 years; and

WHEREAS, Members of our branch have had families request the vaccine be administered by their private physician rather than a public agency; and

WHEREAS, The public realizes there is a great demand for the use of the vaccine by public agencies but insists that a larger percentage of this vaccine should be made available for private distribution; now, therefore, be it

Resolved, That the California Medical Association's Commission on Public Health and Public Agencies be instructed to take such steps as it is able to assure as equitable and fair local distribution of Salk vaccine as is possible under prevailing conditions of supply, and that it be vigilant in taking such actions as may be required hereunder.

(Reference Committee No. 3 noted in its report: This resolution is intended to correct any existing inequities in the distribution of the Salk vaccine. Your committee feels that it is desirable for this program to be kept on a voluntary basis. It is believed that more rapid action will be forthcoming if this is maintained on a local level.)

RESOLUTION No. 9

Introduced by: Matthew N. Hosmer.

Representing: San Francisco County.

Subject: Lectures on Medical Ethics.

WHEREAS, In these times of increasing pressure, close scrutiny and greater demands, it is of paramount importance that relations between physicians as well as patient-physician relationships reflect the

highest credit on the physician and on the medical profession; now, therefore, be it

Resolved, That the American Medical Association be urged to request each medical school to assign a member of the clinical faculty to give at least three hours of formal lectures on medical ethics, professional conduct and manners each year to members of the senior class.

(Reference Committee No. 3 noted in its report: This resolution emphasizes the necessity of training medical students in the principles of ethical practice. Your committee has amended the "resolved" portion of the resolution by inserting the words "conduct and manners" after the word "ethics.")

RESOLUTION No. 11

Introduced by: Matthew N. Hosmer.

Representing: San Francisco County.

Subject: Nursing Education Trends.

WHEREAS, There is an increasing trend toward abandonment of nursing schools by private hospitals of this State; and

WHEREAS, Public schools and colleges will assume an increasing role in the education of nurses; and

WHEREAS, The education and clinical training of nurses is of utmost importance to all persons, hospitals and physicians in our state; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association instruct the Committee on Medical Education and Hospitals to study these trends and advise those concerned with these problems.

(Reference Committee No. 3 noted in its report: This resolution is concerned with changing trends in nursing education with emphasis on the increasing roles played by public schools and colleges. Your committee is in favor of the intent of this resolution. Inasmuch as a Committee on Medical Education and Hospitals exists, the "resolved" portion has been changed to read . . . [as above].)

RESOLUTION No. 12

Introduced by: Matthew N. Hosmer.

Representing: San Francisco County.

Subject: Advertising Standards.

WHEREAS, A year ago the American Medical Association discontinued the awarding of Council seals and advertising emblems to products and advertising copy which met acceptance requirements; and

WHEREAS, Increased pressure is sometimes being brought in the placing of advertising copy by the advertisers; and

WHEREAS, It is the duty and the prerogative of each medical society to maintain high standards for the acceptance of advertising copy in its official publications; and

WHEREAS, CALIFORNIA MEDICINE has established rules governing the acceptance of advertising copy; now, therefore, be it

Resolved, That the C.M.A. urge county medical societies in California independently to adopt advertising rules similar to the advertising rules for CALIFORNIA MEDICINE, which are based on high standards of quality of product and proven accuracy of the advertising, and be it further

Resolved, That the delegates to the American Medical Association be instructed to inform other state delegations of the necessity of an overall uniform code in medical advertising.

(Reference Committee No. 3 noted in its report: Your committee believes that every effort should be made to maintain the highest level of advertising in all journals and publications.)

RESOLUTION No. 14

Introduced by: Matthew N. Hosmer.
Representing: San Francisco County.
Subject: Provision of Medical Care.

WHEREAS, There are groups of persons in this state, namely the aged, handicapped and disabled, the chronically ill and dependent children, who do not possess the means or health requirements which will allow them to purchase any type of health insurance; and

WHEREAS, It is desirable that the best medical care be provided for these groups and that such care must be financed by the tax moneys of the local community and the state in which such persons reside; and

WHEREAS, Such medical care may be afforded with greater dignity and efficiency by the use of existing hospital facilities in the local community as well as the professional services of physicians in the local area in which such persons reside; and

WHEREAS, Such care may be provided at less cost to the communities by the use of said existing facilities and professional services than by the creation of federal or state hospitals, panels and bureaucracies; now, therefore, be it

Resolved, That California Medical Association study the development of an insurance program which may provide for the health needs of the named groups and persons, which program may be made available to those communities within this state who have not already made provision for such groups or who may in the future request this type of care for the above named groups and persons.

(The C.P.S. Reference Committee noted in its report: Your committee is impressed with the need for meeting the issues of the day with the practical action of encouraging prepaid care for the groups mentioned in the resolution.)

RESOLUTION No. 15

Introduced by: Matthew N. Hosmer.
Representing: San Francisco County.
Subject: Care for Rural Groups.

WHEREAS, There has been concern in nation and state that rural groups and persons have not enjoyed the advantages of health insurance as fully as those in urban areas; and

WHEREAS, It is desirable that such insurance be made available to those groups and persons; now be it

Resolved, That the California Medical Association direct California Physicians' Service and/or California Physicians' Insurance Corp. to continue to prosecute the sale of existing services to such groups and persons and that California Medical Association develop new types of contracts, if needed, to provide for the health insurance needs of those in rural areas.

(The C.P.S. Reference Committee noted in its report: Delegates attending the committee hearing expressed great interest in making C.P.S. or C.P.I.C. coverage available to rural groups and persons. Suggestions were offered as to how physicians might assist C.P.S. in stimulating interest and making known the advantages of such coverage among patients in rural areas. Approval of this resolution will implement attempts to solve a very real problem in providing coverage for a large segment of California's population not now so protected.)

(Resolutions No. 16, 17, 18 and 19 were combined by Reference Committee No. 3 into one substitute resolution, which was adopted. The original resolutions are shown here so that their intent may be seen. The substitute resolution of the Reference Committee is shown at the conclusion of the item following Resolution No. 19, under the heading "Comments by Reference Committee No. 3.")

RESOLUTION No. 16

Introduced by: Matthew N. Hosmer.
Representing: San Francisco County.
Subject: Tissue and Surgical Committees.

WHEREAS, It is recognized professional standards of hospitals may be enhanced by the activities of Tissue and Surgical Committees; and

WHEREAS, Failure to keep detailed records may jeopardize hospital accreditation for intern and resident training; and

WHEREAS, The rules and regulations of the Joint Commission on an accredited hospital may be subject to individual interpretation by the inspectors of hospitals; now, therefore, be it

Resolved, That the Joint Commission on Accreditation of Hospitals be asked to review and revise its rules and regulations regarding Tissue and Surgical Committees to the extent that no inspector by personal interpretation of these rules and regulations may penalize any hospital for failure to keep detailed minutes of the meetings of the Tissue and Surgical Committees.

RESOLUTION No. 17

Introduced by: Matthew N. Hosmer.

Representing: San Francisco County.

Subject: Staff Meetings.

WHEREAS, The requirement of the Joint Commission on Accreditation that 75 per cent of each hospital staff attend quarterly or monthly meetings at each hospital of which a physician is a staff member was presumably designed to promote better patient care; and

WHEREAS, As the majority of such hospital meetings are now conducted they do not so serve; and

WHEREAS, The proper place for postgraduate instruction of practicing physicians is at medical society or medical school meetings; and

WHEREAS, Such attendance should be strictly on a voluntary basis; and

WHEREAS, The review of the work of staff members at hospitals can be accomplished more properly and thoroughly in small meetings such as tissue committee, surgical committee and executive committee meetings than where a large number of the staff are present; now, therefore, be it

Resolved, That our delegates to the A.M.A. be instructed to urge the adoption by the Joint Commission on Accreditation of the ruling that attendance at hospital staff meetings should be entirely on a voluntary basis.

RESOLUTION No. 18

Introduced by: Matthew N. Hosmer.

Representing: San Francisco County.

Subject: Joint Commission Approval.

WHEREAS, The objectives and general policies of the Council on Medical Education, the Residency Review Committees, the Specialty Board and the Joint Commission on Accreditation are laudable, and they have resulted in improved graduate training and patient care; and

WHEREAS, The application of certain policies appears to have been arbitrary, has been abrupt, and has been disruptive of training programs and hos-

pital operations, and such actions have impaired the acceptance of policies which are recognized to have a constructive purpose which merits acceptance; now, therefore, be it

Resolved, That the aforementioned bodies dealing with approval of intern and residency training programs and hospital accreditation be requested to:

1. Dissociate the approval of education programs from hospital accreditation except that accreditation remain a prerequisite to approval of graduate educational programs;

2. Maintain separate inspectors and inspections to determine the fitness of a hospital for accreditation and educational programs;

3. Withdraw approval or place limitations upon the approval of an existing training program only after discussion with the Chief of the Department involved, the Chief of Staff, the Hospital Administrator, and the Chairman of the Education Committee, if such exists, thereby insuring that these representatives of the hospital staff and administration be informed of the reasons for such contemplated withdrawal or limitation, thus providing an opportunity for correction of deficiencies;

4. Furnish copies of all communications relative to such matters to the Chairman of the Board of Trustees, the Administrator, the Chief of Staff and the Chief of the Department involved.

5. Delay, except in aggravated instances, the withdrawal of approval of a training program for a reasonable period of time, thereby permitting the correction of deficiencies and avoiding the harmful effects upon training programs and hospital operation incurred by abrupt withdrawal of approval.

RESOLUTION No. 19

Introduced by: Matthew N. Hosmer.

Representing: San Francisco County.

Subject: Postgraduate Training Requirements.

WHEREAS, The work of the Council on Medical Education and Hospitals and its allied groups has resulted in better training facilities for interns and residents; and

WHEREAS, Some of the requirements of these groups have inadvertently resulted in:

1. An accumulation of house staff at university and government hospitals, thus leaving private hospitals without an adequate house staff, and

2. The private hospitals' opening outpatient clinics which are in direct competition with the private practice of medicine; and

WHEREAS, A young physician should be adequately trained in all the facets of medicine in-

cluding the care of a sufficient number of indigent and private patients; and

WHEREAS, Many private hospitals are not desirous of entering the private practice of medicine; now, therefore, be it

Resolved, That the C.M.A. request the A.M.A. Council on Medical Education and Hospitals and its allied groups to review their requirements for postgraduate training as they apply to private hospitals and the necessity of outpatient clinics in such hospitals which do not desire to enter the private practice of medicine.

(Reference Committee No. 3 noted in its report: Resolution No. 16 deals with rules and regulations regarding tissue and surgical committee meeting minutes. Resolution No. 17 has to do with compulsory attendance at staff meetings. The subject of No. 18 is the inspection of and withdrawal or limiting of approval of training programs. Requirements for postgraduate training in so far as they apply to establishment of outpatient clinics by private hospitals is the subject of resolution No. 19.

Your committee recognizes the possible need for continued change in the rules and regulations of the Joint Commission as set forth in resolutions 16, 17, 18 and 19. We believe, however, that while it is probably within our right as a state medical association to suggest changes, it is more becoming that we point out to the Commission areas or fields which should be further studied and revised rather than make demands for specific changes. We therefore offer this substitute resolution in lieu of resolutions 16, 17, 18 and 19.

Whereas, The Stover Committee of the A.M.A. is studying the structure and activities of the Joint Commission on Accreditation of Hospitals; now, therefore, be it

Resolved, That the delegates of the C.M.A. to the A.M.A. be instructed to emphasize to the Stover Committee the contents of resolutions 16, 17, 18 and 19, copies of which will be provided for the delegates to the A.M.A.)

RESOLUTION No. 20

Introduced by: Gerald W. Shaw.

Representing: Los Angeles County.

Subject: Collection of Medical Fees by Hospitals.

WHEREAS, Medicine has traditionally provided free medical care for indigent patients; and

WHEREAS, Medicine has urged the avoidance of such indigencies by voluntary health and accident insurance programs; and

WHEREAS, Certain hospitals have instigated a policy of collecting and retaining fees for medical professional services rendered by staff physicians from clinic patients who maintain health insurance programs; and

WHEREAS, This collection and retention of professional service fees is illegal and morally and ethically indefensible; now, therefore, be it

Resolved, That the California Medical Association is unalterably opposed to the collection and retention of fees for professional services by any hospital, whether it be a profit or nonprofit organization; and be it further

Resolved, That a copy of this resolution be forwarded to the Board of Medical Examiners for their action.

(Reference Committee No. 3 noted in its report: This resolution reemphasizes an existing problem regarding the practice of medicine by hospitals. Since the existing authority of the Medical Practice Act is sufficient to control this practice, we have amended the resolution to read [as above].)

RESOLUTION No. 21

Introduced by: Robert Helms.

Representing: Long Beach Branch, Los Angeles County Medical Association.

Subject: Indoctrination of Interns and Residents.

WHEREAS, Interns and residents completing their periods of hospital service in California are not always well informed of the advantages of private practice and of the help offered them by the California Medical Association in locating and in beginning a practice; and

WHEREAS, Closed panel systems may at times seem to offer greater remuneration and opportunity; now, therefore, be it

Resolved, That the House of Delegates recommend that each component county medical society having an intern and resident training program within its area appoint a committee for the purpose of informing the interns and residents of the advantages of the private practice of medicine and of the functions and activities of the C.M.A.; and be it further

Resolved, That the facilities of the C.M.A. be made available to assist in this program wherever desired.

(Reference Committee No. 3 noted in its report: This problem which deals with indoctrination of interns and residents deserves consideration.)

RESOLUTION No. 22

Introduced by: Robert Lee Dennis.

Representing: Santa Clara County.

Subject: Identification of Resolutions.

WHEREAS, A resolution passed by the House of Delegates of the C.M.A. may have been presented to the House of Delegates by a person other than the author of the resolution; and

WHEREAS, A resolution may reflect a very considerable amount of research and work by the author on the subject matter of the resolution; and

WHEREAS, Committees and organizations to which a resolution may finally be submitted for action may be not only desirous of the advice and assistance of the resolution's author but in addition may require papers and reports of the background work of the resolution; now, therefore, be it

Resolved, That henceforth all resolutions presented to the House of Delegates of the C.M.A. will be identified by the name of the author or authors; and be it further

Resolved, That all modifications or amendments of the original resolution passed by the House of Delegates of the C.M.A. will be indicated by appropriately placed footnotes, and that the committee or person responsible for the amendments will be additionally identified.

(Reference Committee No. 3 noted in its report: This resolution is concerned with the loss of original content and author identity of resolutions through various amendments and revisions by committees, both in the C.M.A. and the A.M.A.)

* * *

RESOLUTION No. 26

Introduced by: Lewis T. Bullock.
Representing: Los Angeles County.
Subject: Rabies Control.

WHEREAS, Universal vaccination with chick embryo vaccine has been proven to be a safe, reliable and effective method for the control of rabies in animals; and

WHEREAS, Failure on a local level to utilize available public health measures has led to a rising incidence of rabies, the loss of livestock and a constant hazard to the lives of Californians; and

WHEREAS, Because of rapid and universal transportation rabies can be diminished only by a statewide control program;

Resolved, That the California Medical Association restate its support of universal vaccination of all dogs for the control of rabies; and be it further

Resolved, That copies of this resolution be forwarded to the Governor of California, the appropriate legislative committees and the State Director of Public Health.

(Reference Committee No. 3 noted in its report: This resolution will serve to affirm our support of measures intended to correct the ever increasing problem of rabies control in California.)

* * *

RESOLUTION No. 27

Introduced by: William Kaiser.
Representing: Alameda-Contra Costa County.
Subject: Industrial Accident Fee Schedule.

WHEREAS, The work of the Industrial Accident Fee Committee, under the chairmanship of Dr. Francis J. Cox, during past years has resulted in an improvement of the California Industrial Accident Commission Fee Schedule; and

WHEREAS, This improvement leaves great strides still to be made; now, therefore, be it

Resolved, That the committee be extended the congratulations of this House for their accomplishment; and be it further

Resolved, That the Medical Services Commission be urged to continue their vigorous efforts toward the necessary further improvement of the Industrial Accident Fee Schedule.

(Reference Committee No. 3 in its report: Offered the above resolution as a substitute for the original.)

* * *

RESOLUTION No. 28

Introduced by: William Kaiser.
Representing: Alameda-Contra Costa County.
Subject: Liability in First Aid.

WHEREAS, It is a hardship for doctors of medicine to treat roadside accident cases under present circumstances in which their liability for such treatment is not clear; now, therefore, be it

Resolved, That this House direct the appropriate committees of the California Medical Association to investigate the advisability of legislation clearly outlining and defining the responsibility of a physician who voluntarily treats an accident victim at the scene of an accident.

(Reference Committee No. 3 noted in its report: This problem of liability in first aid is recognized as a serious one which can confront any one of us. Without being aware of any reasonable means of solution, your committee certainly feels the subject is worthy of further consideration. We recommend that it *do pass* and be referred through the Council to the appropriate committee.)

* * *

RESOLUTION No. 29

Introduced by: T. D. Englehorn.
Representing: Monterey County.
Subject: Medical Expert Testimony.

WHEREAS, Medical expert testimony in personal injury lawsuits is becoming increasingly more important in the courts of California and much of the testimony is being presented by practitioners of medicine not qualified as experts in the particular field in which they are testifying; and

WHEREAS, Such testimony is often confusing, conflicting, unintelligent and at times biased, and results only in confusion of both judge and jury; and

WHEREAS, A system for obtaining impartial medical testimony has been established in Minnesota and in New York; now, therefore, be it

Resolved, That the California Medical Association's Council, through such committee as it may determine, explore all possibilities for improving the present situation, and that it consult with the State Bar and other interested groups and report its findings to this House of Delegates.

(Reference Committee No. 3 noted in its report: Here in the problem of medical expert testimony, we are confronted with a problem which affects all of us and one which deserves further study and consideration.)

‘ ‘ ‘

RESOLUTION No. 31

Introduced by: Robert Smalley.

Representing: Mendocino-Lake County.

Subject: "Grass Roots" Education Against Socialized Medicine.

WHEREAS, The members of the California Medical Association and the American Medical Association are frequently asked to send telegrams to congressmen to influence impending legislation against socialized medicine; and

WHEREAS, In spite of this, there is a continued drift both toward socialism and socialized medicine; and

WHEREAS, Well informed medical men are unanimously agreed that socialized medicine and socialism are detrimental to the health and welfare of the country; and

WHEREAS, The best progress in combating this evil was made when a firm of press agents were retained by the American Medical Association and conducted a countrywide "grass roots" educational campaign against socialism and socialized medicine; and

WHEREAS, Similar progress has not been made since their services were discontinued; now, therefore, be it

Resolved, That the California Medical Association reaffirm its support of a "grass roots" educational campaign; and be it further

Resolved, That the California delegates to the American Medical Association introduce a similar resolution in the House of Delegates of the American Medical Association.

(Reference Committee No. 3 recommended against adoption of the resolution as not being needed, but the House of Delegates approved an amendment and voted the amended resolution as it appears above.)

RESOLUTION No. 32

Introduced by: Edgar F. Mauer.

Representing: Los Angeles County.

Subject: Armed Forces Medical Library.

WHEREAS, The Armed Forces Medical Library contains the world's greatest collection of medical literature; and

WHEREAS, Its present housing is inadequate and dangerous and prevents proper use of this material; and

WHEREAS, A bill has been introduced in the Congress to establish a National Library of Medicine with adequate quarters; now, therefore, be it

Resolved, That the California Medical Association support the establishment of a National Library of Medicine in a new and adequate building and that all California senators and congressmen be requested to support this proposal.

(Reference Committee No. 3 noted in its report: This resolution indicates our support of a worthy project, namely, a National Library of Medicine.)

‘ ‘ ‘

RESOLUTION No. 33

Introduced by: Dave F. Dozier.

Representing: Sacramento County Medical Society.

Subject: Trustees of C.P.S.

WHEREAS, The President of the California Physicians' Service in his year of activity acquires and has in his possession much official and unofficial knowledge relative to the welfare of California Physicians' Service, its beneficiaries and physician members; and

WHEREAS, Present by-laws, on occasion, terminate his position not only as President but also as member of the California Physicians' Service Board of Trustees, thereby occasioning serious loss of this knowledge to C.P.S. and its Board; now, therefore, be it

Resolved, That Chapter VII of the by-laws of California Physicians' Service be amended by adding a new section, No. 1(b), to said Chapter VII, to read as follows:

"Sec. 1(b). In addition to the trustees elected or appointed as otherwise in these by-laws provided, the immediate past-president shall serve as a trustee, with all of the rights and privileges of such office, for a period of one year after the termination of his tenure as president, regardless of eligibility as to consecutive terms. The immediate past-president shall serve in addition to the authorized number of trustees specified in Chapter VI, Sec. 1 of these by-laws."

(The C.P.S. Reference Committee noted in its report: By way of explanation, the present by-laws of

California Physicians' Service authorize the trustees to make any change in the by-laws that may seem necessary, with the one exception that amendments relating to a change in the number of trustees must be approved by this House of Delegates. The by-laws of C.P.S. further provide that this House of Delegates may amend at any regular annual session, such amendment to become effective immediately. Therefore, if the foregoing amendment is adopted, it will be effective immediately.)

RESOLUTION No. 34

Introduced by: Ernest F. Elmore.

Representing: Santa Clara County.

Subject: Automobile Safety Devices.

WHEREAS, It is the aim of Doctors of Medicine to prevent as well as to treat injury and disease; and

WHEREAS, Many medical man hours, much suffering and cost are involved in repairing the human damages resulting from automobile accidents; and

WHEREAS, Studies and experiences have indicated that deaths and injuries resulting from motor car accidents can be reduced markedly by safety devices designed to protect the occupants of motor cars; and

WHEREAS, Some of the protective and safety devices are readily available and can be installed with a minimum of cost and inconvenience, while other changes to effect greater safety and to reduce deaths and injuries can be made only in the design and manufacture of automobiles; therefore, be it

Resolved, That the California Medical Association urges every owner of an automobile to install available safety devices in his car; and be it further

Resolved, That the California Medical Association urges each automobile manufacturer to expand research concerning safety and to produce automobiles equipped with additional safety features and devices; and be it further

Resolved, That the California Medical Association urges the California Senate and Assembly to study this problem of automobile safety with one of the objects being to require certain minimum standards of equipment; and be it further

Resolved, That copies of this resolution be forwarded to (1) the appropriate legislative committee of our State Senate and Assembly, (2) the Director of Public Relations of each of the automobile manufacturers, and (3) to the C.M.A. delegates to the A.M.A. for action in the House of Delegates of the A.M.A.

(Reference Committee No. 3 noted in its report: Your committee is heartily in accord with the intent of this resolution urging the use of automobile safety devices.)

RESOLUTIONS REFERRED TO COUNCIL

The following resolutions were, by action of the 1956 House of Delegates, referred to the Council of the California Medical Association for further study, action or report, as indicated in each item.

RESOLUTION No. 6

Introduced by: Jay J. Crane.

Representing: Los Angeles County.

Subject: Private Practice of Medicine in Tax-Supported Facilities.

WHEREAS, The House of Delegates of the California Medical Association on May 3, 1955, adopted a resolution reaffirming the unalterable opposition of the California Medical Association to corporate and tax-subsidized medical practice; and

WHEREAS, The resolution also opposed a tax-supported medical school engaging in the practice of medicine and the levying of fees and collection thereof for professional services; and

WHEREAS, Full time members of the medical faculties of tax-supported medical schools are engaged in the private practice of medicine for their own account using facilities supported and supplied by tax-supported medical schools; and

WHEREAS, This private practice of medicine is conflicting with the principles of private enterprise and inimical to the rights of the private practitioner of medicine; and

WHEREAS, The House of Delegates by resolution should evolve rules and regulations governing the private practice of full-time medical faculty members of tax-supported medical schools; now, therefore, be it

Resolved, That the California Medical Association, acting through its House of Delegates, proclaim and issue the following rules:

1. Full-time members of the medical faculty of a governmental or tax-supported medical school may engage in private practice only in private offices and private hospitals and not in offices or hospitals supported or maintained by tax money.

2. That if the medical requirements of a private patient are such that the necessary equipment for proper treatment is available only within a governmentally or tax-supported facility or hospital, then and in that event, such equipment may be available for the treatment of a private patient, but only on the same basis and privileges that any indigent patient receives and without any charge being made for professional services. If similar equipment becomes available in a private medical facility or hospital, then the private patient must be treated or referred to the private medical facility or hospital.

3. Private practice by full-time members of a medical faculty of a governmentally or tax-supported medical school contrary to the foregoing rules shall be considered unethical practice.

(Reference Committee No. 3 noted in its report, as amended on the floor of the House: "This resolution states (1) that full-time members of medical faculties of government or tax-supported medical schools may engage in private practice only in private offices and private hospitals and not in offices or hospitals supported or maintained by tax money and (2) private practice by full-time members of a medical faculty of a governmentally or tax-supported medical school contrary to the foregoing rules shall be considered unethical practice. Your committee recognizes the importance of the problems set forth by this resolution. We believe, however, that the magnitude of the problem is such that it requires further and prolonged study and should be referred to the Council, the Council to refer to a committee the question of the private practice of medicine by physicians whose facilities are provided for them by institutions, this committee to report yearly to the Council.")

* * *

RESOLUTION No. 23

Introduced by: Robert Lee Dennis.
Representing: Santa Clara County.
Subject: Narcotic Drug Addiction.

WHEREAS, The illicit use of narcotic drugs has increased alarmingly in the United States during the past fifteen years; and

WHEREAS, To the newly addicted persons an ever increasing percentage of teen-age children are being added; and

WHEREAS, The illegal traffic in drugs flourishes because of the staggering rewards which it offers to the unscrupulous; and

WHEREAS, The present attempted method of control is a punitive and prohibitive one, failing to recognize that while the unaddicted purveyor of illegal narcotics is a criminal of contemptible character, drug addiction itself is overwhelmingly a problem of sickness and not one of crime; and

WHEREAS, The punitive approach alone to the control of narcotics addiction drives the addicts under cover and forces them to a situation of desperation in which they are often obliged to push the drug, infecting others, and to engage in criminal acts, ranging from prostitution to shoplifting, and from armed robbery to murder in order that they may obtain a supply of drugs; and

WHEREAS, It is believed that the problem could be better solved by a combined punitive and therapeutic approach the first arm of which would be the offering of narcotics of good quality by legally and medically controlled clinics to all existing proven narcotic addicts, thus forcing ruin upon the illicit traffic at its economic source, bringing the

narcotic addict to the surface where he could be counted, registered, evaluated and treated, and changing drug addiction from a criminal offense to a remediable illness and the second arm of which would be the strengthening of our laws against and punishments of the unaddicted dealers and peddlers of illegal drugs; and

WHEREAS, These steps combined with a thorough-going program of education should result in an ever-diminishing number both of new additions and of crimes committed by addicts; and

WHEREAS, It is believed that the medical profession has never before offered its organized assistance to the correction of drug addiction; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association offers to the legally constituted governmental bodies responsible for the control of narcotics the full assistance of the California Medical Association in correcting the misuse of narcotic drugs; and be it further

Resolved, That the House of Delegates of the California Medical Association approves and hereby directs the Council and appropriate committees of the California Medical Association under the Council to press for: (1) The establishment of clinics wherever needed in California in which narcotics of good quality will be offered at cost to all proven existing narcotic addicts under a system of legal and medical control to be determined by study; (2) fundamental changes in our laws which will increase the punishments administered to persons found guilty of selling, transferring or handling narcotic drugs illegally to the extent that the traffic will be extremely hazardous and unattractive, and (3) an intensive program of public education whereby the effects and dangers of narcotic drugs will be made known; and be it further

Resolved, That the House of Delegates of the California Medical Association hereby directs its delegates to the House of Delegates of the American Medical Association to present and press for adoption of an appropriately worded similar resolution in the House of Delegates of the American Medical Association at its next regular session.

(Reference Committee No. 3 noted in its report: Your committee wishes to recognize not only the importance of the subject of this resolution but also the excellence of the author's presentation . . . Your committee recommends that this resolution be referred to the Council.)

* * *

RESOLUTION No. 24

Introduced by: James H. Thompson.
Representing: San Francisco County.
Subject: Definition of Specialist.

WHEREAS, Specialists are recognized by both the public and the medical profession; and

WHEREAS, It is essential that some definition of a specialist be established; and

WHEREAS, The definition will be made by insurance companies or other lay organizations if the medical profession does not take steps to make such a qualification; now, therefore, be it

Resolved, That the Council of C.M.A. request the Medical Services Commission to study and make recommendations as to the standards for qualification of specialists in the various specialty fields.

(Reference Committee No. 3 noted in its report: While recognizing the problem which has stimulated the introduction of this resolution, which deals with the definition of a specialist, your committee feels that a request for an existing Commission to study and make recommendations in a matter which cannot be settled on a basis of a single state, is an oversimplification. We therefore recommend that this resolution be referred to the Council of the C.M.A.)

RESOLUTION No. 35

Introduced by: Frank Robinson.

Representing: San Diego County.

Subject: Private Practice of Medicine in Medical Institutions.

WHEREAS, The House of Delegates of the California Medical Association on May 3, 1955, adopted a resolution reaffirming the unalterable opposition of the California Medical Association to corporate and tax-subsidized medical practice; and

WHEREAS, The resolution also opposed a tax-supported medical institution engaging in the practice of medicine and the levying of fees and collection thereof for professional services; and

WHEREAS, Full-time members of the medical faculties of tax-supported medical institutions are engaged in the private practice of medicine for their own account using facilities supported and supplied by tax-supported or corporate medical institutions; and

WHEREAS, This private practice of medicine is conflicting with the principles of private enterprise and inimical to the rights of the private practitioners of medicine; and

WHEREAS, The House of Delegates by resolution should evolve definite policies with respect to the private practice of medicine by members of the profession practicing in tax-supported institutions; now, therefore, be it

Resolved, That the California Medical Association, acting through its House of Delegates, proclaim and issue the following policies:

1. Members of the Medical faculty of a tax-supported or corporate institution may engage in

private practice only in private offices and private hospitals and not in offices or hospitals supported or maintained by tax or corporate monies.

2. That if the medical requirements of a private patient are such that the necessary equipment for proper treatment is available only within a governmentally or tax-supported facility or hospital, then and in that event, such equipment may be available for the treatment of a private patient. If similar equipment becomes available in a private medical facility or hospital, then the private patient must be treated or referred to the private medical facility or hospital.

3. Private practice by members of a medical faculty of a tax-supported or corporate institution contrary to the foregoing policies shall be considered unethical practice.

(Reference Committee No. 3 noted in its report: Your committee finds that this resolution concerning the private practice of medicine in medical institutions is identical in intent with that of the resolution No. 6 introduced by Jay J. Crane of Los Angeles County under the subject of "Private Practice of Medicine In Tax-Supported Facilities." Therefore, your committee recommends referral to the Council for consideration along with resolution No. 6.)

RESOLUTION No. 36

Introduced by: Arthur A. Marlow.

Representing: San Diego County.

Subject: All Medications Prescribed Should be Labelled with the Names of Their Contents.

WHEREAS, The number and brands of medications have been increasing at a tremendous rate; and

WHEREAS, Increasing travel has resulted in vast numbers of persons carrying unlabelled medications which cannot be identified readily; and

WHEREAS, Undesirable and sometimes dangerous side effects of medications are frequent and require immediate identification of such medication; and

WHEREAS, A physician, without knowledge of the nature of a previously prescribed medication, may prescribe additional and, therefore, excessive dosage of a medication; now, therefore, be it

Resolved, That the California Medical Association instruct its delegates to the American Medical Association to introduce a resolution at the next meeting of the House of Delegates recommending that all medications prescribed be labelled with the names of their contents.

(Reference Committee No. 3 noted in its report: Your committee recognizes the need stated in this resolution which has as its subject the labelling of medications prescribed with the names of their contents. We have heard considerable testimony on this resolution and, after careful consideration, we believe that

action on this matter should be postponed. We therefore recommend that this resolution be referred to the Council for study and action by an appropriate committee.)

RESOLUTIONS NOT ADOPTED

The following resolutions were introduced but not adopted by the House of Delegates. Comments by the reference committee appended to each resolution give the reasons for the recommendation of negative action.

RESOLUTION No. 13

Introduced by: Matthew N. Hosmer.
Representing: San Francisco County.
Subject: C.M.A. Public Relations.

WHEREAS, Public relations efforts are of great importance to each county society as well as to the California Medical Association; and

WHEREAS, Each county has different public relations problems and programs to meet these needs; and

WHEREAS, Many county societies have developed effective public information programs; and

WHEREAS, The bulk of monies available are spent at the state level; now, therefore, be it

Resolved, That the C.M.A. take immediate and effective action to develop a long-range public relations program based upon integration, and subsidy when desired and indicated, of public relations programs of individual county societies, emphasizing more realistic programs on doctor-patient relationships.

(Reference Committee No. 3 noted in its report: Your committee is aware of the local problems of county societies and their branches with respect to public relations but upon due consideration it is our opinion that the Public Relations Department of the C.M.A. is fulfilling the intent of this resolution. We further believe that it would be poor policy and financially unfeasible to allocate C.M.A. monies to local groups. We therefore recommend that this resolution *do not pass*.)

RESOLUTION No. 25

Introduced by: George Houck.
Representing: Santa Clara County.
Subject: Insurance Forms.

WHEREAS, A steadily increasing proportion of the professional contacts of physicians and surgeons with their patients is involved with insurance carriers, and the cost of processing the forms of the insurance carriers has become both a major problem and a significant expense in the offices of all physicians and surgeons; and

WHEREAS, The expense of this work is properly a cost of the business of the insurance carrier and should not be passed on to the physician or, indirectly, to the other patients of the physician who are not covered by insurance; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association instruct the officers of the California Medical Association to discuss the problem with representatives of insurance carriers, requesting that a reasonable fee be paid for the completion of claim forms that insurance companies find necessary for the conduct of their own business.

(Reference Committee No. 3 noted in its report: Your committee is aware of the annoyance caused by endless insurance forms. We do not feel, however, that the insured should be penalized through a charge to the carriers. We would like to call attention to the almost universal adoption of the standard form which can be obtained from the C.M.A. This form facilitates and simplifies the handling of insurance claims. We further urge that the C.M.A. continue its efforts toward universal adoption of its standard form. Your committee recommends that this resolution *do not pass*.)

RESOLUTION No. 30

Introduced by: William H. Thompson.
Representing: San Mateo County.
Subject: Retirement Benefits for Physicians.

WHEREAS, Present Federal legislation does not allow self-employed physicians retirement planning benefits as are available to most citizens under a compulsory or voluntary plan; and

WHEREAS, The majority of California physicians desire such benefits; and

WHEREAS, It is not known whether a majority of physicians desire retirement planning benefits in the form of tax deductible retirement income insurance premiums; Social Security inclusion; or some other plan or combination of plans; and

WHEREAS, We have not been adequately informed on the advantages and disadvantages of these various plans; now, therefore, be it

Resolved, That the C.M.A. through its component County Medical Societies shall arrange and subsidize the dissemination of adequate unbiased information by pamphlet and speakers to interested County Medical Societies; and be it further

Resolved, That each County Medical Society shall study this information and any other information they wish and shall then poll their members as to the type of retirement planning benefits desired; and be it further

Resolved, That the results of these County Society polls shall be compiled by the C.M.A. and that the C.M.A. Delegates to the A.M.A. House of Delegates

be instructed to present a resolution to the 1957 Session indicating the desires of the majority of C.M.A. members and resolving that the A.M.A. request Federal legislation to that end.

(Reference Committee No. 3 noted in its report: It is the opinion of your committee that the intent of this resolution, which deals with retirement benefits for physicians, is admirable. The timing of the proposed survey is, however, questioned. Our representatives have for some time been, with due authorization of our elected delegates, actively supporting the Reed-Keogh bill. It would seem inadvisable that the proposed survey be carried out while action on this bill is still pending. If the Reed-Keogh bill or similar legislation should not pass, this resolution might be resubmitted.)

CONSTITUTIONAL AMENDMENT ADOPTED

The following amendment to the Constitution of the California Medical Association was introduced in the 1955 House of Delegates and, in accordance with present requirements of the Constitution, was placed on the table for one year. At the meeting of the House of Delegates held April 29, 1956, it was unanimously adopted.

WHEREAS, A new corporation has been established called PHYSICIANS' BENEVOLENCE FUND, INC., to administer the duties under Section 6 of Article IV of the Constitution of the California Medical Association; now, therefore, be it

Resolved, That Section 6 of Article IV of the Constitution which now reads:

"At least \$1.00 out of the annual dues paid by each active member of the Association shall be allocated to the Physicians' Benevolence Fund and shall only be used for the purposes as set forth in the By-Laws."

is hereby amended to read as follows:

"At least \$1.00 out of the annual dues paid by each active member of the Association shall be allocated to the Physicians' Benevolence Fund, Inc., a corporation, and shall be used for the purposes as set forth in that corporation's Articles and By-Laws."

BY-LAW AMENDMENT ADOPTED

The following amendment to the By-Laws of the California Medical Association was introduced in the form of a resolution, which was rephrased by Reference Committee No. 4 into an exact amendment to the By-Laws of the Association and unanimously adopted. The complete report of the Reference Committee, together with the original resolution, is shown here.

RESOLUTION No. 10

Introduced by: Matthew N. Hosmer.

Representing: San Francisco County.

Subject: Section on Internal Medicine.

WHEREAS, The Constitution of the California Medical Association states that the Scientific Assembly shall be divided into sections, each section representing that branch of medicine described in its title; and,

WHEREAS, It is desirable that the title of the scientific section should describe that branch of medicine represented by that section; and,

WHEREAS, The term "General Medicine" may be expected to include such specialties as allergy, syphilology and dermatology, and other branches of medicine, all of which have their own scientific sections in the California Medical Association and conduct their deliberations and presentations outside the scientific section of "General Medicine"; and

WHEREAS, The section on "General Medicine" now concerns itself with those subjects which are identified throughout the state and nation in scientific groups as "Internal Medicine"; therefore, be it

Resolved, That the California Medical Association House of Delegates discontinue the scientific section on "General Medicine" and create a scientific section to be titled, "Scientific Section on Internal Medicine."

Your Reference Committee has modified the "Resolved" of the above resolution to conform to the By-Laws of the California Medical Association as follows:

Resolved, That Chapter IV, Section 1 (a) of the By-Laws which now reads

"Section 1.—Division of Scientific Work

"(a) Scientific Sections. The scientific work of the Association shall be divided into seventeen scientific sections, as follows: General Medicine; General Surgery; Pediatrics; Ear, Nose and Throat; Urology; Anesthesiology; Obstetrics and Gynecology; Radiology; Industrial Medicine and Surgery; Pathology and Bacteriology; Dermatology and Syphilology; Neuropsychiatry; General Practice; Public Health; Allergy; Eye; and Orthopedics."

is hereby amended to read as follows:

Section 1.—Division of Scientific Work

"(a) Scientific Sections. The scientific work of the Association shall be divided into seventeen scientific sections, as follows: Internal Medicine; General Surgery; Pediatrics; Ear, Nose and Throat; Urology; Anesthesiology; Obstetrics and Gynecology; Radiology; Industrial Medicine and Surgery; Path-

ology and Bacteriology; Dermatology and Syphilology; Neuropsychiatry; General Practice; Public Health; Allergy; Eye; and Orthopedics.

Your Reference Committee recommends that this resolution, as rephrased and modified, *do pass*.

ELECTION OF OFFICERS

At the May 2, 1956, meeting of the House of Delegates the following officers were elected. Terms of office are indicated where they extend for more than one year.

President-Elect.....Frank A. MacDonald, Sacramento
Speaker.....James C. Doyle, Beverly Hills
Vice-Speaker.....J. Norman O'Neill, Los Angeles
Councilors—for terms ending 1959:

Second District.....Omer W. Wheeler, Riverside
Fifth District.....Robert O. Pearman, San Luis Obispo
Eighth District.....Samuel R. Sherman, San Francisco
Eleventh District.....Ralph C. Teall, Sacramento
At-Large.....Arthur A. Kirchner, Los Angeles
T. Eric Reynolds, Oakland

Councilor—for unexpired term ending 1957:

Sixth District.....Donald C. Harrington, Stockton

Delegates and Alternates to American Medical Association
—for two-year terms starting January 1, 1957:

Delegates

Leopold H. Frazer
E. Vincent Askey
Dwight L. Wilbur
Donald Cass
J. Lafe Ludwig
R. Stanley Kneeshaw
*C. J. Attwood

Alternates

Hartzell H. Ray
Donald A. Charnock
James E. Feldmayer
J. Norman O'Neill
H. Milton Van Dyke
Burt Davis
Arlo A. Morrison
†J. E. Vaughan

Trustees to California Physicians' Service:

Bert L. Halter
Merlin L. Newkirk
Leon O. Desimone
Robb Smith
Mr. Robert A. Hornby

*One-year term ending December 31, 1956.

†Unexpired term ending December 31, 1957; alternate to Frank A. MacDonald.

Executive Committee Minutes

Tentative Draft: Minutes of the 260th Meeting of the Executive Committee, San Francisco, July 24, 1956.

The meeting was called to order by Chairman Heron in the Yosemite Room of the Sir Francis Drake Hotel, San Francisco, on Sunday, June 24, 1956, at 9:30 a.m.

Roll Call:

Present were President Charnock, President-Elect MacDonald, Speaker Doyle, Auditing Committee Chairman Heron and Secretary Daniels.

A quorum present and acting.

Present by invitation during all or part of the meeting were Doctors Arthur A. Kirchner and T. Eric Reynolds. Messrs. Hellgren of Lumberman's Mutual Casualty Co., Charles O. Finley and Calvin Smith of Charles O. Finley Co., Administrators of the C.M.A. disability insurance program, Glenn W. Gillette and Robert L. Thomas of the C.M.A. staff.

Absent for cause were Council Chairman Lum and Editor Wilbur.

1. Membership:

(a) On motion duly made and seconded, 119 delinquent members whose dues have been received since May 26, 1956, were voted reinstatement.

(b) On motion duly made and seconded in each instance, Doctors George W. Koch of Orange County and Alfred J. Cooper of San Diego County were voted Retired Membership.

(c) On motion duly made and seconded in each instance, 14 applicants were voted Associate Membership. These were: Anita E. Faverman, Alameda-Contra Costa County; Mary Hayes, Jack Schiff, Fresno County; Lester S. McLean, Humboldt County; Donald L. Hutchinson, Peter VanArsdale Lee, Faye G. Sheeley, Los Angeles County; Jack Levitt, Napa County; Eugene E. Bossi, Henry W. Turkel, H. E. Vandervoort, Albert E. Warrens, San Francisco County; L. H. Stahn, Stanislaus County; Joan R. Hart, Placer-Nevada-Sierra County.

(d) On motion duly made and seconded in each instance, 7 applicants were voted reductions of dues because of prolonged illness or postgraduate study.

2. Committee on Health and Accident Insurance:

(a) *Disability Insurance:* Discussion was held on proposals submitted by Lumberman's Mutual Casualty Co. in order to correct the serious losses being incurred through the disability insurance coverage available to association members.

On motion duly made and seconded, it was voted to accept a 3-year plan with a step-up premium according to age, paying a maximum monthly indemnity of \$400 with benefits beginning on the first day of injury or eighth day of illness.

(b) *Group Life Insurance:* Discussion was held on a proposal that group life insurance be made available to all California Medical Association physicians. The fee for retaining an insurance consultant to obtain bids and specifications would be approximately \$1,500-\$2,000.

On motion duly made and seconded, it was voted to refer this matter to the Council.

(c) *Catastrophic Hospital Plan:* Doctor Kirchner explained the \$300 deductible catastrophic hospital expense plan being offered to some county medical societies.

The committee recommends that a decision to

enter into such a program be left up to the respective county medical societies.

3. *Commission on Medical Services:*

(a) *New Member:* Discussion was held on the appointment of a new member to replace Doctor Ralph Teall, resigned.

(b) *Committee on Indigent Care:* On motion duly made and seconded, it was voted to accept the resignation of Dr. Hollis L. Carey as Chairman, and to appoint Dr. C. L. Cooley of San Francisco in his stead. Doctor Carey will remain on the committee.

On motion duly made and seconded, it was voted to authorize the Committee on Indigent Care to enter into a study with Stanford Medical School on the costs of providing medical care to the indigent in Butte County. The necessary funds to be allocated from the Commission budget if Foundation financing is not available.

(c) *Insurance Pamphlet:* The Commission recommended use of the C.M.A. mailing list by the Health Insurance Council for a mailing to all members of a pamphlet titled "Some Fundamentals of Health Insurance."

On motion duly made and seconded, it was voted to approve the mailing of this pamphlet.

(d) *Committee on Fees:* The Commission recommended that a subcommittee of the Committee on Fees be created to deal exclusively with the Industrial Accident Fee Schedule. On motion duly made and seconded, it was voted to create such a subcommittee with the following appointments: Doctors James H. Thompson of San Francisco, George D. Maner and Packard Thurber, Jr. of Los Angeles, and Francis J. Cox, San Francisco, Chairman.

4. *Committee on Mental Health:*

Discussion was held regarding the appointment of a new member to replace Dr. H. L. Gartshore, resigned. On motion duly made and seconded, it was voted to appoint Dr. Knox Finley to fill the unexpired term.

5. *House of Delegates—Transactions:*

On motion duly made and seconded it was voted to approve the publication of the proceedings of the

House of Delegates in summary form in CALIFORNIA MEDICINE.

6. *1958 and 1959 Annual Sessions:*

Discussion was held on the short lapse of time between the 1958 meetings of the C.M.A. and the A.M.A. in San Francisco. On motion duly made and seconded, it was voted to hold the 1958 C.M.A. meeting in Los Angeles and the 1959 meeting in San Francisco.

7. *Woman's Auxiliary:*

On motion duly made and seconded, it was voted to recommend to the Auxiliary that all matters be referred to the Auxiliary Advisory Board before coming to the Executive Committee or the Council.

8. *Advisory Committee to the State Alcoholic Rehabilitation Commission:*

A request from the State Alcoholic Rehabilitation Commission for C.M.A. representatives on its Advisory Committee was received.

On motion duly made and seconded, it was voted to appoint Doctors Hollis L. Carey of Gridley and Cullen Ward Irish of Los Angeles as the C.M.A. representatives to the Advisory Committee.

9. *Council Meetings:*

On motion duly made and seconded, it was voted to hold the next meeting of the Council in Los Angeles on Saturday, July 28, 1956.

On motion duly made and seconded, the matter of holding Council meetings in other parts of the state was referred to the Council.

10. *Health Fair:*

Doctor Charnock read a letter from the Los Angeles *Examiner* in which the paper offered to pay the expenses of a jointly sponsored Health Fair in Los Angeles in the fall of 1957.

On motion duly made and seconded, it was voted to refer this item to the Council.

Adjournment:

There being no further business to come before the committee, the meeting was adjourned at 12:15 p.m.

IVAN C. HERON, M.D., *Chairman*

ALBERT C. DANIELS, M.D., *Secretary*

In Memoriam

AYERS, THOMAS FRED. Died in San Francisco, June 21, 1956, aged 69. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1920. Licensed in California in 1920. Doctor Ayers was a member of the San Francisco Medical Society.



BAK, EDWARD W. Died September 17, 1955, aged 81. Graduate of Rush Medical College, Chicago, Illinois, 1898. Licensed in California in 1927. Doctor Bak was a member of the Los Angeles County Medical Association.



BARBER, EDNA MAY. Died in Alameda, June 20, 1956, aged 74, of melanotic carcinoma. Graduate of the Oakland College of Medicine and Surgery, 1914. Licensed in California in 1914. Doctor Barber was a retired member of the Alameda-Contra Costa Medical Association, the California Medical Association, and an associate member of the American Medical Association.



BUDAEFF, IVAN T. Died in Daly City, June 12, 1956, aged 60, of cancer of the lung. Graduate of the University of Oregon Medical School, Portland, 1930. Licensed in California in 1936. Doctor Budaeff was a member of the San Mateo County Medical Association.



CRANE, CARL CUSTER. Died in San Francisco July 1, 1956, aged 80. Graduate of Harvard Medical School, Boston, Massachusetts, 1899. Licensed in California in 1909. Doctor Crane was a member of the San Francisco Medical Society.



CUSHMAN, JOSEPH BRILLING. Died in San Jose, January 17, 1956, aged 49, of myocardial infarction and arteriosclerotic disease. Graduate of Rush Medical School, Chicago, Illinois, 1934. Licensed in California in 1949. Doctor Cushman was an associate member of the Alameda-Contra Costa Medical Association.



DESMOND, MICHAEL A. Died January 9, 1956, aged 74. Graduate of the University of Illinois College of Medicine, Chicago, 1903. Licensed in California in 1925. Doctor Desmond was a member of the Los Angeles County Medical Association.



HAWLEY, DARRELL BERTRAND. Died May 4, 1956, aged 65. Graduate of the University of California, Berkeley-San Francisco, 1934. Licensed in California in 1934. Doctor Hawley was a member of the Los Angeles County Medical Association.

HUBBARD, CLINTON D. Died in Manhattan Beach, June 28, 1956, aged 90. Graduate of the University of Michigan Medical School, Ann Arbor, 1891. Licensed in California in 1908. Doctor Hubbard was a retired member of the Los Angeles County Medical Association, the California Medical Association, and an associate member of the American Medical Association.



HUSTEAD, EDWIN L. Died in Los Angeles, June 11, 1956, aged 70, of heart disease. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1912. Licensed in California in 1921. Doctor Hustead was a member of the Los Angeles County Medical Association.



LEWIS, CYRIL E. Died in Auburn, July 9, 1956, aged 79. Graduate of Jefferson Medical College of Philadelphia, Pennsylvania, 1904. Licensed in California in 1905. Doctor Lewis was a retired member of the Placer-Nevada-Sierra County Medical Society, the California Medical Association, and an associate member of the American Medical Association.



LOVE, ANDREW A. Died June 12, 1956, aged 58. Graduate of the University of Minnesota Medical School, Minneapolis, 1930. Licensed in California in 1930. Doctor Love was a member of the Los Angeles County Medical Association.



REYNOLDS, RALPH A. Died in San Francisco, June 25, 1956, aged 64. Graduate of the University of California, Berkeley-San Francisco, 1925. Licensed in California in 1925. Doctor Reynolds was a member of the San Francisco Medical Society.



SMITH, NINA R. Died in Pasadena, June 1, 1956, aged 88. Graduate of Sioux City College of Medicine, Iowa, 1900. Licensed in California in 1924. Doctor Smith was a retired member of the Los Angeles County Medical Association, the California Medical Association, and an associate member of the American Medical Association.



WEITZNER, HERBERT. Died in Oakland, June 19, 1956, aged 44, of coronary thrombosis. Graduate of Rush Medical College, Chicago, Illinois, 1938. Licensed in California in 1946. Doctor Weitzner was a member of the Alameda-Contra Costa Medical Association.

Annual Meeting

Ambassador Hotel
LOS ANGELES

April 28 - May 1, 1957

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted to the appropriate section secretary (see list on this page) no later than November 19, 1956.

Scientific Exhibits

Space is available for scientific exhibits. If you would like to present an exhibit, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association no later than December 1, 1956. (No exhibit shown in 1956, and no individual who had an exhibit at the 1956 session, will be eligible until 1958.)

SCIENTIFIC PAPERS

SCIENTIFIC EXHIBITS

PLANNING MAKES PERFECT
AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

- ALLERGY William J. Kerr, Jr.
711 D Street, San Rafael
- ANESTHESIOLOGY Howard S. Downs
332 North Glendale Avenue, Glendale 6
- DERMATOLOGY AND SYPHILOLOGY . . Edwin M. Hamlin
2932 North Fresno Street, Fresno
- EAR, NOSE AND THROAT Seymour Brockman
2007 Wilshire Boulevard, Los Angeles 57
- EYE Harold B. Alexander
14 West Valerio Street, Santa Barbara
- GENERAL PRACTICE Thomas N. Elmendorf
Masonic Building, Willows
- GENERAL SURGERY W. Kenneth Jennings
233 West Pueblo Street, Santa Barbara
- INDUSTRIAL MEDICINE AND SURGERY . . Earle T. Dewey
600 Stockton Street, San Francisco 20
- INTERNAL MEDICINE Donald W. Petit
960 East Green Street, Pasadena 1
- OBSTETRICS AND GYNECOLOGY . . . Keith P. Russell
511 South Bonnie Brae, Los Angeles 57
- ORTHOPEDICS Raymond M. Wallerius
2909 J Street, Sacramento 16
- PATHOLOGY AND BACTERIOLOGY . . Dominic A. DeSanto
Mercy Hospital, San Diego 3
- PEDIATRICS Sidney Rosin
6230 Wilshire Boulevard, Los Angeles 48
- PSYCHIATRY AND NEUROLOGY . . . Howard A. Black
2901 Capitol Avenue, Sacramento 16
- PUBLIC HEALTH James C. Malcolm
15000 Foothill Boulevard, San Leandro
- RADIOLOGY Stanford B. Rossiter
1111 University Drive, Menlo Park
- UROLOGY Edmund Crowley
1930 Wilshire Boulevard, Los Angeles 57



WOMAN'S AUXILIARY

TO THE CALIFORNIA MEDICAL ASSOCIATION

Dear Doctor

Is your wife a member of the Woman's Auxiliary to your County Medical Society? If the answer is "yes," both you and she will be interested in the facts we shall bring out in these paragraphs. If the answer is "no," we are hopeful that you will read with interest the material we are presenting.

The annual convention of the Woman's Auxiliary to the American Medical Association was held in Chicago June 11th to 15th, at the same time as the A.M.A. convention. Those of us who were representing the California Auxiliary were pleased to hear that once again our Auxiliary was the largest in the 48 states, as we have been for the past several years. I say we were pleased, but at the same time we realize that when certain statistics are made known we are not as large as it would appear at first glance. The important thing to consider is how nearly we are reaching our potential. The potential, state-wide, is around 14,000 and yet our state membership in the Auxiliary is just under 7,000. Many of our smaller County Auxiliaries very nearly reach their potential, for here seems to exist a close relationship between the County Medical Society and the Auxiliary. Here it is that the physicians seem best to know the capabilities of the women and to appreciate their accomplishments in behalf of medicine.

It is in our large metropolitan counties that the memberships of the two organizations are in need of being drawn more closely together. For example, the potential in Los Angeles County (excepting the associate members) is around 6,000 and yet the largest number the Auxiliary has ever recorded is 1,700. There are several reasons for this. The hospitals have their own auxiliaries to which many of the physicians' wives belong and which consume all the free time these women have to give. The county is heavily organized and the wives are representative women who participate in civic, school and religious activities in their separate communities. However, there still remains a large area not covered, which includes many wives of physicians who know little or nothing of the Auxiliary, its purposes or its achievements. The Membership Chairman contacts each newly accepted member of the Los Angeles County Medical Association and through him invites his wife to membership in the Auxiliary. Perhaps this invitation never gets home to the wife, or perhaps the physician is too busy to talk it over with her

and recommend that she join. In some cases it is a matter of complete indifference because nothing of the activities of the Auxiliary has come to the attention of the physician.

At the convention in June the Woman's Auxiliary to the A.M.A. gave the American Medical Educational Foundation a check in excess of \$100,000 from the Auxiliary. This was the result of the activity of the Auxiliary all over the United States in behalf of private medical schools. Los Angeles County Auxiliary received an Award of Merit for its very substantial contribution in the County classification.

During the round-table discussion on Legislation the speaker for the A.M.A. stressed how impressive had been the results of the Auxiliary campaign for wires and letters sent to the legislators in opposition to HR Bill No. 7225 relative to Social Security. Each chairman of legislation at the state and county level had a part in this program.

It was heartening to hear the reports of the National Nurse Recruitment Committees. Thousands of Future Nurses' Clubs are in action all over the country in junior and senior high schools. They will bring in many girls to the nursing field and thus help to cut down the shortage of nurses which now exists all over the medical world.

In California the Woman's Auxiliary is very active in behalf of Physicians' Benevolence. This, we feel, is a service to our own, an effort to make life a little easier for physicians who have met with misfortune and who must look to others for help.

We feel sure that when your wife has a chance to review the many areas of endeavor of the Auxiliary and the outstanding accomplishments in these areas she will wish to become a part of the organization. Even if her family demands are too great for her to give much of her time she will be greatly rewarded for whatever time she is able to spare. She will enjoy being enlisted in so great a cause.

Doctor, if you are one whose wife is not yet a member of her County Auxiliary, won't you help us to bring her into membership with us? If your County Medical Society is one of the few which does not yet have an Auxiliary, we hope you will give serious thought to having one organized this year. We need your help in order to give our maximum service to your community needs.

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

Guest speakers for Merritt Hospital's **eleventh annual medical seminar** to be held August 23 and 24 in Oakland, will be Dr. James J. Waring, president of the Colorado Foundation for Research in Tuberculosis, and Dr. Joel W. Baker, department of general surgery, Virginia Mason Clinic, Seattle. Included on the program of the invitational scientific meeting will be a panel discussion on surgical problems in elderly patients.

The **guest speakers** will also address a joint meeting of the seminar with the Alameda-Contra Costa Medical Association at 8:15 p.m., Thursday, August 23, at Hunter Hall, 1025 Second Avenue, Oakland. Dr. Waring's subject will be "Specific Plans for Control of Tuberculosis" and Dr. Baker will discuss "The Acute Surgical Abdomen: Unexpected Problems Encountered at Laparotomy."

LOS ANGELES

The professional education and symposium committee of the Los Angeles County Heart Association will conduct its 26th annual professional **symposium on heart disease** on October 10 and 11 at the Wilshire-Ebell Theatre, with sessions from 9:30 a.m. to 12 noon, and 1:45 p.m. to 5:30 p.m. each day. An evening panel session will be from 8 to 10 p.m. on October 10 at a location to be announced later.

Atherosclerosis and arteriosclerosis will be discussed on the evening panel by Drs. David Barr of New York, Meyer Friedman of San Francisco, John Gofman of Berkeley, Ancel Keys of Minneapolis, William Likoff of Philadelphia and Jeremiah Stamler of Chicago.

Dr. Likoff will lead the discussion and open forum on surgery of acquired cardiovascular disease, and Dr. Bernard Lown of Boston and Dr. M. Friedman of San Francisco will present papers on digitalis therapy in management of therapeutic problems.

NAPA

Dr. Sterling S. Cook was appointed health officer of Napa County on June 18 succeeding Dr. Edward R. Pinckney.

SAN DIEGO

The tenth annual **postgraduate assembly**, sponsored by the San Diego County General Hospital, will be held September 19 and 20 at the County Hospital. Further information may be obtained from Dr. Michael J. Feeney, 3415 Sixth Avenue, San Diego 3.

GENERAL

The **American Urological Association** has announced the opening of competition for its annual award of \$1,000 (first prize of \$500, second prize \$300 and third prize \$200) for essays on the result of some clinical or laboratory research in urology. Competition is limited to urologists who have been graduated not more than ten years and to hospital interns and residents doing research work in urology.

Full particulars may be obtained from the executive secretary of the association, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before December 1, 1956.

* * *

The first **International Cancer Cytology Congress**, sponsored jointly by the International Union Against Cancer, the College of American Pathologists, the American Society of Clinical Pathologists and the Inter-Society Cytology Council, will be held at the Drake Hotel, Chicago, October 9-11, 1956. Further information may be obtained from Dr. Arthur H. Dearing, College of American Pathologists, Prudential Plaza, Suite 2115, Chicago 1.

* * *

The **American Academy of Obstetrics and Gynecology** has been renamed the American College of Obstetricians and Gynecologists. Dr. Ralph E. Campbell, president of the college, announced. The new name became official on May 11. The organization was first incorporated in August, 1951. It now has 3,831 fellows, the announcement said, and expects to induct some 500 new fellows at its 1956 meeting which will be held at the Palmer House, Chicago, November 7 to 9.

* * *

At the two-day annual convention held at the Ambassador Hotel in Los Angeles on April 28 and 29, the **Medical Assistants of Northern California** and the **Medical Assistants of Southern California** formally merged and will henceforth be known as California Medical Assistants Association. The following officers were elected: President, Socorro Munoz, Kern County; president-elect, Lilli Woods, San Francisco; first vice-president, Claire Booth, Los Angeles County; second vice-president, Anne Reece, Tulare County; corresponding secretary, Clara Lehmberg, Kern County; recording secretary, Grace Todd, Los Angeles County; treasurer, Leona Thompson, San Diego County.

* * *

Formation of the **International Research Council**, a world-wide organization for the dissemination of knowledge concerning aphasia associated with hemiplegia, was announced recently by Hamilton Cameron, M.D., general director of the Council. The aims of the council include the establishment of a clearing house on the subject, and the publication of a monthly *Review-Bulletin*.

Dr. Cameron, a hemiplegic aphasic since 1943, devised a "Hand Talking Chart" for vocally paralyzed persons (*CALIFORNIA MEDICINE*, August, 1953, page 120).

Copies of the chart and information on the International Research Council may be obtained from Dr. Cameron at 601 West 110th Street, New York.

* * *

Dee DuBridge, president of the California Institute of Technology, will serve as chairman of a special committee appointed by the **Ford Foundation** to recommend a plan for distribution of a previously announced appropriation of \$90,000,000 to the nation's privately supported medical schools for use "in the strengthening of their instruction." Carlyle Jacobsen, executive dean for medical education, State University of New York, will be executive vice-chairman.

Other members of the committee are: Dr. George Packer Berry, dean, Harvard University Medical School, Boston; Detlev W. Bronk, president, The Rockefeller Institute; Leonard Carmichael, secretary, Smithsonian Institution; Dr. Ward Darley, president, University of Colorado, Boulder; Dr. John Holmes Dingle, professor, School of Medicine, Western Reserve University, Cleveland; Leon

Falk, Jr., chairman of the board of Maurice and Laura Falk Foundation and director of National Steel Corporation, Pittsburgh; A. Crawford Greene, attorney, San Francisco; Robert March Hanes, president, Wachovia Bank and Trust Company, Winston-Salem, N. C.; Mrs. Albert D. Lasker, president, Albert and Mary Lasker Foundation, New York; Dr. Robert Frederick Loeb, professor of medicine, Columbia University, New York; William Farnsworth Loomis, director, the Loomis Laboratory, Greenwich, Conn.; Dr. Franklin David Murphy, chancellor, University of Kansas; and Robert Winship Woodruff, chairman of the finance committee of the Coca-Cola Company, Atlanta.

* * *

The American Goiter Association has announced that it is again offering the **Van Meter Prize Award** of \$300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the association which will be held in the Hotel Statler, New York, N. Y., May 28, 29, and 30, 1957, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations, should not exceed 3,000 words in length and must be presented in English. Duplicate typewritten copies, double spaced, should be sent to the Secretary, Dr. John C. McClintock, 149½ Washington Avenue, Albany 10, N. Y., not later than January 15, 1957.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education assemblies and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Anesthesiology Seminar. August 27 to 29. Eighteen hours. Fee: \$50.00.

Treatment of Emotional Problems in Office Practice. Thursdays, September 13 through December 6. Twenty-four hours. Fee: \$50.00.

Fundamental Principles of Radioactivity Including Clinical Use of Radioisotopes. Wednesdays, September 19, 1956 through July 3, 1957. One hundred eighty hours. Fee: \$700.00.

Photography in Medical Practice and Research. Thursdays, September 20 through December 13. Twenty-four hours. Fee: \$35.00.

Surgical Anatomy. September 24 to November 26. Fee: \$75.00.

Dermatology in General Practice. Wednesdays, October 17 through November 21. Twelve hours.*

Aviation Medicine. October 24, 25, 26. Twenty-three hours.*

Third Annual X-ray Technicians Symposium. November 10 and 11.*

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Postgraduate Seminar in Pharmacology. September 27 to 29. Fifteen hours. Fee: \$25.00.

Ophthalmological Conference on Glaucoma. September 27, 28, 29. Fifteen hours. Fee: \$60.00.

Symposium on Trauma, Franklin Hospital, September 29 and 30. Twelve hours. Fee: \$40.00.

Medicine for General Practitioners. East Oakland Hospital, Tuesday Evenings, September 10 to December 3. Twenty-four hours. Fee: \$50.00.

Psychological Aspects of Medical Practice. Wednesday Evenings, October 3 to December 12. Twenty hours.*

Recent Advances in Laboratory and Clinical Medicine for Medical Technicians. Tuesday Evenings, October 16 to November 13. Nine hours.*

Symposium on Cardiovascular Disease. November 14. Nine hours. Fee: \$12.50.

Annual Ophthalmology Conference. December 5, 6, 7. Twenty hours.*

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: \$250.00 per month.

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MOntrorse 4-3600, Ext. 665.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

The Physics of Diagnostic and Therapeutic Radiology. Fridays, September 7 through February 1, 1957. Designed for physicians preparing for the specialty of radiology. Twenty hours. Fee: \$50.00.

Intensive Review of Internal Medicine. Especially designed for physicians planning to take their written examination for American Boards in Internal Medicine. Monday through Friday, 8:30 a.m. to 12:30 p.m. September 24 to October 5. Forty hours. Fee: \$65.00.

Home Course in Electrocardiography. Begins October 12. Fifty-two weeks. Fee: \$100.00.

Bedside Clinics and Panel Discussions on Therapy in Internal Medicine. Los Angeles County Hospital, Thursdays, October 18 through January 24, 1957, 7:30 to 9:30 p.m. Twenty-four hours. Fee: \$65.00.

Pediatrics Clinics for the General Practitioner. Twenty weeks, October 9 through February 12, 1957, 8:30 to 9:30 a.m., Children's Hospital, Santa Anita Foundation Research Building Auditorium. Fee: \$40.00.

* Fees to be announced.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: \$30.00. (Each session all-inclusive.)

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Anesthesiology. Daily, full-time, six months, beginning each six months. Fee: \$300.

Surgical Anatomy, Dissection, Demonstration and Lectures. Monday and Wednesday, October 1, 1956 to June 5, 1957. 264 hours.

Surgical Anatomy, Dissection, Demonstration and Lectures on Upper and Lower Extremities. Monday and Wednesday, October 1, 1956 to January 9, 1957. 104 hours.

Surgical Anatomy, Dissection, Demonstration and Lectures. Wednesdays, October 3, 1956 to June 5, 1957. Seventy-four hours.

Surgical Anatomy, Demonstration and Lectures of Upper and Lower Extremities. Wednesdays, October 3, 1956 to January 9, 1957. Twenty-six hours.

General Urology. Mondays, October 1, 1956 to December 17, 1956. Twenty-four hours.

General and Surgical Pathology. Tuesday and Thursday, October 2, 1956 to June 4, 1957. 194 hours.

Traumatic and Minor Orthopedic Surgery. Tuesday and Thursday, October 2, 1956 to January 10, 1957. Thirty seven and one-half hours.

Roentgen Diagnosis and Therapy. Wednesday, October 3, 1956 to June 5, 1957. Thirty-three hours.

Surgical Physiology. Thursday, October 4, 1956 to June 6, 1957. Sixty-four hours.

Contact: Chairman, Section on Graduate and Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANGelus 9-9131. Ext. 205.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE CIRCUIT COURSE

SACRAMENTO VALLEY CIRCUIT, in cooperation with Stanford University School of Medicine:

Dunsmuir—Monday, October 21, 28, November 4, 11.

Chico—Tuesdays, October 22, 29, November 5, 12.

Marysville—Wednesday, October 23, 30, November 6, 13.

Auburn—Thursdays, October 24, 31, November 7, 14.

WEST COAST CIRCUIT in cooperation with University of Southern California School of Medicine:

San Luis Obispo—Mondays, February 18, 25, March 4, 11, 1957.

Santa Maria—Tuesdays, February 19, 26, March 5, 12, 1957.

Santa Barbara—Wednesdays, February 20, 27, March 6, 13, 1957.

Contact: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill St., Los Angeles 13.

Medical Dates Bulletin

AUGUST MEETINGS

NEVADA STATE MEDICAL ASSOCIATION annual meeting in conjunction with Reno Surgical Society, Riverside Hotel, Reno, Nevada, August 22 to 25. **Contact:** Lowell Peterson, M.D., chairman, Arrangements and Program Committee, 130 North Virginia St., Reno, Nevada.

SEPTEMBER MEETINGS

COLORADO STATE MEDICAL SOCIETY Annual Session, Estes Park, Colorado, September 5 to 8. **Contact:** Charley J. Smyth, M.D., chairman, Scientific Program Committee, 835 Republic Bldg., Denver 2, Colorado.

UTAH STATE MEDICAL ASSOCIATION Annual Scientific Meeting, Hotel Utah, Salt Lake City, September 6 to 8. **Contact:** Mr. Harold Bowman, executive secretary, 42 S. Fifth Street E., Salt Lake City 2, Utah.

ST. JOHN'S HOSPITAL Postgraduate Assembly, September 10, 11, 12, 9 a.m. to 4 p.m. and 8 to 9 p.m. **Contact:** John C. Eagan, M.D., Director, 1328 22nd Street, Santa Monica, or phone EXbrook 4-0281.

STOCKTON POSTGRADUATE STUDY CLUB, Thursday evenings, September 13 to November 15, Stockton State Hospital. **Contact:** A. Merchant, M.D., Medical-Dental Bldg., Stockton.

MONTANA MEDICAL ASSOCIATION Annual Meeting, September 13 to 15, Great Falls, Montana. **Contact:** Mr. R. Hegland, Box 1692, Billings, Montana.

SANTA BARBARA COUNTY HEART ASSOCIATION Symposium on Heart Diseases, in cooperation with University of Southern California Postgraduate Division, September 15, 9 a.m. to 5 p.m., Santa Maria Inn, Santa Maria. **Contact:** Katherine McCloskey, executive director, 18 La Arcada Court, Santa Barbara.

WASHINGTON STATE MEDICAL ASSOCIATION Annual Meeting, Olympic Hotel, Seattle, September 16-19. **Contact:** Mr. Ralph W. Neill, executive secretary, 1309 Seventh Ave., Seattle, Washington.

SAN DIEGO COUNTY GENERAL HOSPITAL TENTH ANNUAL POSTGRADUATE ASSEMBLY. September 19-20. **Contact:** Howard B. Kirtland, Sr., M.D., Chairman Postgraduate Committee, 3505 Fourth Avenue, San Diego 3.

THE AMERICAN ROENTGEN RAY SOCIETY, Statler Hotel, Los Angeles, September 25 to 28. **Contact:** Wilbur Bailey, M.D., chairman, Local Committee, 2009 Wilshire Blvd., Los Angeles.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE ANNUAL MEETING. September 29, La Playa Hotel, Carmel. **Contact:** Mrs. Mildred B. Coleman, Assistant Secretary, Room 515, 350 Post Street, San Francisco 8.

OCTOBER MEETINGS

SAN FRANCISCO HEART ASSOCIATION Annual Postgraduate Symposium, October 3, 4, 5, 1956, St. Francis Hotel, San Francisco. **Contact:** Executive director, 604 Mission St., San Francisco.

AMERICAN CANCER SOCIETY, California Division, Annual Cancer Conference, October 4, 2 to 5 p.m., Fairmont Hotel, San Francisco. **Contact:** Otto Pfueger, M.D., Conference chairman, 384 Post St., San Francisco.

HERRICK MEMORIAL HOSPITAL Medical Staff Second Annual Postgraduate Symposium, 9 a.m.-5 p.m., October 5, Berkeley High School Little Theatre, Allston Way between Grove and Milvia, Berkeley, Calif. *Contact:* Administrator's Office, Herrick Hospital, Berkeley, or telephone: THornwall 5-0130.

AMERICAN COLLEGE OF SURGEONS Clinical Congress, San Francisco, October 8 to 12. *Contact:* American College of Surgeons Office, 40 E. Erie St., Chicago, Ill.

SAN DIEGO COUNTY HEART ASSOCIATION Professional Symposium, U. S. Naval Hospital Auditorium, Balboa Park, San Diego, October 9. *Contact:* O. Martin Avison, executive director, San Diego County Heart Association, 1651 Fourth St., San Diego 1.

LOS ANGELES COUNTY HEART ASSOCIATION 26th Annual Symposium on Heart Disease, Wilshire-Ebell Theatre, 4401 West 8th St., Los Angeles, October 10 and 11. *Contact:* Robert A. Pike, executive director, Los Angeles County Heart Association, 316 South Bonnie Brae, Los Angeles 57 or telephone DUnkirk 8-4127.

CALIFORNIA MEDICAL ASSOCIATION Regional Conference on Physicians and Schools, October 12 and 13, Santa Barbara. *Contact:* R. L. Thomas, assistant executive secretary, 450 Sutter Street, San Francisco.

CALIFORNIA ACADEMY OF GENERAL PRACTICE 8th Annual Scientific Assembly, Hotel Statler, Los Angeles, October 14, 15, 16, 17. *Contact:* William W. Rogers, executive secretary, California Academy of General Practice, 461 Market St., San Francisco.

ALAMEDA-CONTRA COSTA DIABETES ASSOCIATION one-day Symposium on Oral "Insulinoids," October 22, Highland-Alameda County Hospital, Oakland. *Contact:* Institute for Metabolic Research, Highland-Alameda County Hospital, Oakland.

ORTHOPAEDIC HOSPITAL and RANCHO LOS AMIGOS RESPIRATORY CENTER jointly sponsor "A Seminar in Comprehensive Patient Care for Selected Neuromuscular Disabilities," October 22 to 26. All-day sessions beginning at 9:00 a.m. and one evening session, October 24. *Con-*

tact: C. L. Lowman, M.D., Orthopaedic Hospital, 2400 S. Flower St., Los Angeles, or John Affeldt, M.D., Rancho Los Amigos, Hondo, Calif.

NOVEMBER MEETINGS

LOS ANGELES UROLOGICAL ASSOCIATION Postgraduate Assembly, Ambassador Hotel, Los Angeles, November 12 to 16. *Contact:* Miss Vesta Fitzsimmons, executive secretary, 6253 Hollywood Blvd., Los Angeles 28.

VETERANS ADMINISTRATION HOSPITAL Conference on Pulmonary Diseases, each Thursday. *Contact:* William R. Haas, M.D., director, Professional Services, Veterans Administration Hospital, Oakland, Calif.

SONOMA COUNTY HEART ASSOCIATION Cardiovascular Symposium presented in cooperation with University of California Medical Extension, and Stanford University School of Medicine, Odd Fellows Hall, Santa Rosa, November 14. *Contact:* Thomas M. Torgerson, M.D., president, Sonoma County Heart Association, P. O. Box 844, Santa Rosa, Calif.

1957 MEETINGS

CALIFORNIA RURAL HEALTH COUNCIL Third Annual Conference on Rural Health, January 25 and 26, Hotel Senator, Sacramento. *Contact:* Glenn Gillette, associate director, Public Relations, California Medical Association, 450 Sutter Street, San Francisco.

SOCIETY OF GRADUATE SURGEONS OF LOS ANGELES COUNTY Surgical Forum, March 4 to 8, Ambassador Hotel, Los Angeles. *Contact:* Wm. F. Roe, M.D., 14431 Hamlin St., Van Nuys, Calif.

REGIONAL MEETING INTERNATIONAL COLLEGE OF SURGEONS, Santa Barbara, California, April 1 to 2. *Contact:* Ross V. Parks, M.D., 1930 Wilshire Blvd., Los Angeles 57.

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles, April 28 to May 1. *Contact:* John Hunton, executive secretary, 450 Sutter St., San Francisco 8, or Ed Clancy, director of Public Relations, 417 S. Hill St., Los Angeles 13.

INFORMATION

"Medical Abuses" of the VA Outpatient Program

On April 8, 1956, the Associated Press wires carried a story charging that there were "hundreds of abuses of the veterans' medical program by doctors and veterans." The *New York Times* headlined the story "MEDICAL ABUSES CHARGED IN V.A."; the *Chicago Tribune* headlined it "FIND DOCTORS, VETS ABUSE VA MEDICAL PLAN." Since the report on which these charges are based totals 275 pages of small type, the Committee on Federal Medical Services (A.M.A.) feels that a detailed analysis should be provided to the medical profession, as a footnote to the newspaper stories.

"MEDICAL" ABUSES

The following question-and-answer survey of the report may help to clarify the situation.

Q. On what basis are the charges made?
A. Individual reports from 46 VA hospitals and regional offices in 34 states and the District of Columbia.

Q. What were these facilities asked to report?
A. *Actually established* cases where the VA was billed for services not rendered or for complete services when only partial services were rendered and cases in which there have been "allegations or suspicion" of abuses as above.

Q. Is there any over-all tabulation listing the total cases reported, the number concerned with outpatient medical care as distinguished from dental care, the number "actually established" as distinguished from those "alleged or suspected" and those for which insufficient evidence was found?

A. No. The report merely reproduces the answers from the VA facilities. To make any such tabulation, each report must be read individually.

Q. Do the reports tabulate which cases are proven and which are merely alleged?

A. No. To so classify the cases reported, each individual case report must be read in its entirety.

Q. How many medical cases are reported?
A. 81 *medical* cases; 553 *dental* cases.

Reprinted from the Federal Medical Service Newsletter of the Council on Medical Services, A.M.A.

Q. Does this mean 553 dentists and 81 physicians are accused?

A. No, because the method of reporting is not uniform. Some facilities reported the number of authorizations for care suspected, some reported on cases, some reported concerning professional personnel alleged to be overcharging.

Q. Did every facility report some abuses?
A. No. Six said they had no dental care abuses to report; nineteen said they had no medical care abuses to report.

Q. What period was covered in the report?
A. The House Committee on Veterans' Affairs, which requested the survey, asked for all cases arising during the period from January 1, 1953, to March 31, 1955, a period of 27 months. Some cases reported dated back as far as 1947; the reporting facility *discovered* the fee discrepancies only after January 1, 1953, and therefore considered the cases as "arising" within the given period.

Q. How many outpatient services were rendered during this period?

A. VA reports are by fiscal years, rather than calendar years. During fiscal year 1953 (June 30, 1952 to June 30, 1953), fee-basis physicians treated 637,047 VA patients and fee-basis dentists provided 160,796 examinations and 198,664 treatments; during fiscal year 1954, physicians treated 585,057 VA patients and dentists provided 123,170 examinations and 245,634 treatments. These two fiscal years cover a period which overlaps 18 months of the survey period; these figures probably represent an understatement of the total service provided during the survey period.

Q. How does this compare with the "abuses" reported?

A. During the survey period, physicians provided over 1.2 million treatments, with 81 overcharges or suspected overcharges; dentists provided over 726 thousand examinations and treatments, with 553 overcharges reported.

Q. Did the reporting facilities state any opinions concerning these "abuses"?

A. Reporting facilities felt that the great majority of cases were honest mistakes. Discrepancies were almost all felt to be due to clerical mistakes in physicians' and dentists' office records or to misunderstanding of VA regulations. Particularly in regard to dental cases, VA officials frequently pointed out that the dentist concerned had varied the treatment given the patient *for the patient's* good, without realizing that any change in the treatment authorized by the VA would require a supplementary authorization. The "abuse," in other

words, was ignoring some red tape. In almost all cases, the dentist or physician refunded any amount not authorized by the VA, without protest.

Q. What are some of the individual comments from the VA offices?

A. The Chicago office pointed out that there were only 59 "abuses" during a period when over 25,000 dental treatments had been provided; the Louisville office noted that it had found only \$284 in overcharges for dental care while \$526,000 had been expended in uncontested dental fees. In New York City, it was noted that one of the two physicians who had made an overcharge (due to error in physician's records) was known to provide more treatments to veteran patients than he billed the VA for. In Syracuse, New York, it was noted that complaints were made against only two physicians, out of 2,000 participating in the program.

Q. What comment does the House Committee on Veterans' Affairs make?

A. In the "Foreword" to the report, House Committee Print No. 232, Rep. Teague, chairman of the committee says: "Certainly these abuses do not provide the basis for the generalization that there is substantial dishonesty among the medical profession. They do show, however, that in any large program, involving many thousands of individuals,

a certain amount of carelessness, misunderstanding and, in a few cases, outright dishonesty, will creep in."

NON-SERVICE CONNECTED ABUSES?

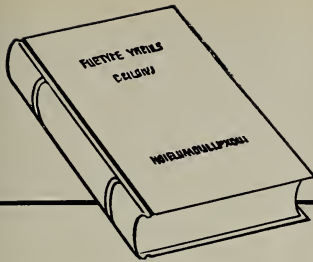
The General Accounting Office of the Federal Government started an investigation (reported in HCP 232) in March, 1955. It took the last 100 GM&S cases admitted to 11 different VA hospitals—excluding those with service-connected disabilities and those with NP or TB ailments—leaving a pure random sample of 1,100 GM&S NSC cases.

As its basis, it used the City Worker's Family Budget of the Labor Department, which estimates \$3,812 to \$4,454 for a four-person family and 46 per cent less (\$2,058 to \$2,405) for a single person. To be generous, the GAO used \$3,500 for its dividing line.

Of the 1,100 veterans, the annual income was found for 935—and 217 had an annual income from \$3,500 to \$12,000; 56 had incomes over \$5,000. Of 950 for whom net worth was obtained, 176 had a net worth of \$5,000 or more, including 79 who had net worths of \$10,000 or more.

After hospitalization, the veterans were asked whether they could have paid for the care; only 612 (a little over half) answered, but 17 said they could have paid. The other 488 didn't say.





THE PHYSICIAN'S *Bookshelf*

SKIN SURGERY—Ervin Epstein, M.D., Assistant Clinical Professor of Medicine (dermatology), Stanford University Medical School. Lea & Febiger, Philadelphia, 1956. 228 pages, 242 illustrations on 101 figures, \$7.50.

This book is a valuable and timely one, for "Skin Surgery" interests not only the dermatologist but all physicians who are called upon to surgically remove any of the defects of the skin.

Cold steel surgery, electrosurgery, cryosurgery, chemo-surgery, abrasive surgery and other approaches are ably dealt with by various authorities in these special fields.

Most of the procedures described can be done in the physician's office. However, the chapters dealing with skin grafting and oral plastic surgery describe procedures which generally are best done in the hospital by those who have special skill in plastic surgery or oral surgery.

In the reviewer's opinion one of the most valuable chapters is that on the chemosurgery of the cutaneous malignancies. This method offers a method of removal which microscopically follows the extensions of every such cancer until it has been completely eradicated. We know of no other method which can as accurately tell when the entire growth has been removed.

The author is to be congratulated upon the development of this work which, as far as our knowledge goes, is the only one in its field.

* * *

THE HEMORRHAGIC DISORDERS—A Clinical and Therapeutic Approach—Mario Stefanini, M.D., Associate Professor of Medicine, Tufts University School of Medicine; and William Dameshek, M.D., Professor of Medicine, Tufts University School of Medicine. Grune & Stratton, New York, 1955. 368 pages, \$11.75.

This is probably the best book available on the hemorrhagic disorders. The wide experience of the authors in the laboratory and at the bedside are combined in a very readable volume. Before discussing the normal hemostatic process, a list of all the blood coagulation factors is presented together with the terms used in the book; this is very helpful in overcoming the confusion the coagulationists have brought upon themselves with each having a different name for the same factor. All hemorrhagic disorders are considered, with sections even on the bleeding tendency of obstetric accidents and dysproteinemia. In addition to descriptive text, there are many supplementary diagrams, charts and tables. The illustrations, both black and white and color, are good and numerous. In the appendix is an outline of screening tests to work out a bleeding problem, together with a description of methods. An interesting innovation is an addendum which brings each chapter up to publication time with a summary of very recent work. A bibliography of more than 750 articles is included. This book is a must for the hematologist, research worker, internist, clinical pathologist and any clinician faced with a bleeding problem.

DOCTORS' OFFICES & CLINICS—Medical and Dental—Paul Hayden Kirk and Eugene D. Sternberg. Reinhold Publishing Corporation 430 Park Avenue, New York 22, N. Y., 1955. 218 pages, \$12.75.

This is really an excellent book in an important field. There is a good section on the historical aspects of doctors' offices and some fairly penetrating philosophical observations, both of which are a pleasant surprise in an essentially technical work.

The pictures are fine, the plans clearly reproduced. The cost analysis will be most useful to those who are contemplating building. If there is a lack, it is in the field of the larger clinics. Though to be sure these organizations usually have their own architects and planners and stand less in need of the kind of advice furnished in this volume.

The whole book points up what everyone knows; viz., that doctors are highly individualistic and each individual requires special treatment. There can be with most doctors no prefabricated plan which he can use. There is still need for the architect on the scene cooperating with the doctor. But even with this in mind, any doctor or groups contemplating building should get this book. It will save him many times the purchase price.

* * *

FUNCTIONAL OTOTOLOGY—The Practice of Audiology—Morris F. Heller, M.D., Assistant Attending Otolaryngologist for Audiology Clinic, Chief of the Audiology Clinic, The Mount Sinai Hospital, New York, Springer Publishing Company, Inc., 44 E. 23rd St., New York 10, N. Y., 1955. 225 pages, \$5.50.

This interesting little book is better than most books on audiology in one respect. Most of them are written in a confusing, highly technical terminology, so that one has to be a physicist or electronics engineer to understand. *Functional Otology* discusses such things as the testing of hearing by pure tones and by speech, hearing aids, speech ("lip") reading, voice and speech production, and similar subjects of audiology in a brief, clear, and accurate manner. While too elementary for the advanced audiologist, it would be of great help to the resident in otolaryngology wishing a basic survey of the subject, and to those physicians whose work touches on the deaf and hard of hearing and their problems.

* * *

YEAR BOOK OF DRUG THERAPY—1955-1956 Series—Harry Beckman, M.D., Director, Department of Pharmacology, Marquette University Schools of Medicine and Dentistry. The Year Book Publishers, Inc., 200 East Illinois St., Chicago, 1956. 560 pages, \$6.00.

The Year Books of Drug Therapy are well done summaries of significant therapeutic literature which attempt to point a proper moral. The possessor has at his desk a review of significant therapy for the preceding year. As the volumes pile up they become an indicator of therapeutic progress.

This year's volume devotes the bulk of attention to cardiovascular diseases (and particularly to anticoagulant drugs), rheumatic disorders, chest diseases and neuropsychiatry.

THERAPY OF FUNGUS DISEASES—An International Symposium. Edited by Thomas H. Sternberg, M.D., Professor of Medicine (Dermatology) and Assistant Dean for Postgraduate Education, and Victor D. Newcomer, M.D., Associate Professor of Medicine (Dermatology), both from the Division of Dermatology Department of Medicine, School of Medicine and Medical Extension, University Extension, University of California at Los Angeles. Little, Brown and Company, Boston-Toronto, 1955, 332 pages with illustrations and diagrams.

Therapy of Fungus Diseases represents a collection of 54 papers presented before the International Symposium on Fungus Disease held at the University of California at Los Angeles in June, 1955. Over 200 leading scientists participated in this program which was concerned largely with the current experimental work in the field of mycology. Of the 54 papers presented, 41 deal with ecologic problems, the status of fungus disease in various countries throughout the world, and in vitro or in vivo laboratory experiments on potential antifungal agents. The remaining 13 papers present statistical reports on therapy of mycotic infection in man, including in some instances dosage and duration of treatment. Of the latter group, those articles concerned with the use of Nystatin in treatment of *Candida albicans* infections give the most practical information for use by the average physician in daily practice. This book is of value mainly to those persons desiring a knowledge of the recent investigative work being carried on in the field of medical mycology.

* * *

EXPERIMENTAL TUBERCULOSIS—Bacillus and Host With an Addendum on Leprosy—Ciba Foundation Symposium—G. E. W. Wolstenholme O.B.E., M.A., M.B., B.Ch. and Margaret P. Cameron, M.A., A.B.L.S., Editors. Little, Brown and Company, Boston, 1955. 396 pages, 69 illustrations, \$9.00.

More than two score outstanding investigators of the nature of the tubercle bacillus and the reaction of the tissues of experimental animals to it discussed their findings at a symposium in London in October 1954. The constitution and characteristics of newly isolated components of the tubercle bacillus were elucidated with the use of electrophoretic and chromatographic separation and chemical, serological and immunological tests. The response of surviving and of growing cells in vitro, as well as of the tissues of intact animals, to the presence of living or dead tubercle bacilli or their constituents, and the effect of various factors on such response, and their relationship to the development of hypersensitivity and to continued multiplication of tubercle bacilli were explored by various workers. Although only a restricted number of the active aspects of the tubercle bacillus and the disease which it produces could be included in these papers, they digest a vast amount of technical data on fundamental problems which should stimulate further investigations in this field. This is not a complete survey of past discoveries in experimental tuberculosis, but rather a series of sallies along its borderlines which significantly extend our knowledge of it. Physicians interested in scientific advances, as well as those especially concerned with the ravages of tuberculosis, may profit from perusing its pages.

* * *

DISEASES OF THE CHEST—H. Corwin Hinshaw, M.D., Ph.D., Clinical Professor of Medicine, Stanford University School of Medicine; L. Henry Garland, M.B., B.Ch., Clinical Professor of Radiology, Stanford University School of Medicine; W. B. Saunders Company, Philadelphia, 1956. 727 pages, \$15.00.

This volume is presented as a textbook for medical students and practitioners. Progress in our knowledge of diseases of the chest has been so rapid that there is urgent need for an up-to-date presentation, particularly in the de-

partments of clinical medicine and radiology. This volume, written by two outstanding leaders in their respective fields, meets the need admirably. The format is excellent. The material is well arranged and compiled with extreme simplicity and conciseness. The arrangement of chapter indices, and the headings and subheadings, make for quick reference to an unusual degree. The opinions expressed by the authors are obviously based on wide experience and sound judgment. If at times they seem somewhat didactic, it is evidently because a full discussion would be quite impossible within the bounds of a single volume.

The roentgenographic illustrations are profuse, the findings unusually clear and relevant. The lateral views do much to clarify the location and extent of the lesions and to establish their value in any roentgenographic study of the chest. Unfortunately, to this reader at least, they are very confusing. The attempt of a few years ago to view films of the chest so that they would be as seen from the position of the x-ray tube has fortunately been discarded, in so far as the PA views are concerned (in deference to the pressure of "public" opinion?), in favor of the position as they would appear on the fluoroscopic screen, or as the clinician sees the patients in the flesh. It is unfortunate that the lateral views should still be presented in juxtaposition to the PA views, not as they would appear under the fluoroscope but rather from the position of the x-ray tube.

Possibly a more detailed discussion of the question of treatment of converters would be desired by some.

Considerable space is given to the technique of pneumothorax and pneumoperitoneum, and in our opinion it is justified. It is quite probable that the next few years will see the pendulum swing back from the present position of extreme neglect to these once indispensable procedures. There is still a place for them, perhaps less glamorous than formerly, but of equal importance to the individual patient.

The emphasis on the recognition of activity of a tuberculous lesion by the radiologist is especially timely, and one would wish the writers had gone even further. In view of the many disastrous results from failure to recognize evidences of activity on the film, we are still hoping for a definite directive that the presence of a tuberculous cavity means that the lesion is active and immediate further study by the clinician is called for.

It would appear that the 1950 classification of the National Trudeau Society has been followed rather than that of 1955. The use of the term "arrested" may still be justified on the grounds of practicability, for its omission from the recent classification leaves an awkward gap.

In summary, the book is a must for all who would be abreast of the times in the field of diseases of the chest.

* * *

BASIC SURGICAL SKILLS—A Manual with Appropriate Exercises—Robert Tauber, M.D., F.A.C.S., Assistant Professor of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania, W. B. Saunders Company, Philadelphia, 1955. 75 pages, illustrated, \$3.75.

This is a very small 75-page book, essentially full of illustrations of methods of tying knots, cutting sutures and putting in surgical stitches. It is a very simple done, but adequate, book illustrating the most fundamental aspects of surgery.

I think that people who are interested in surgery would readily learn all that is in this little book the first two weeks of work in an operating room but it might be helpful to peruse its pages during the first few weeks that one is in the surgical amphitheatre. It is a manual with appropriate exercises and I am sure if one followed the exercises they could learn rapidly the fundamentals of knot tying and suture cutting in surgical procedures.

EXCITABILITY OF THE HEART—Chandler McC. Brooks, Ph.D., Brian F. Hoffman, M.D., E. E. Suckling, M.Sc., M.E.E., Dept. of Physiology and Pharmacology, State University of New York, College of Medicine at New York City and Oscar Orias, M.D., Instituto de Investigacion Medica Mercedes y Martin Ferreyra, Cordoba, Argentina. Grune & Stratton, New York, 1955, 373 pages, \$6.50.

This monograph on excitability of the heart is a major contribution to the field. The authors include a great deal of unpublished work in which they have thoroughly re-examined the entire problem of excitability, refractory period, velocity of conduction, and action currents in the myocardium, utilizing newer methods that they themselves have helped develop.

There are innumerable illustrations and an excellent bibliography. The book will prove of interest to physicians, pharmacologists, and physiologists interested in the cardiac arrhythmias. The authors logically develop the subject of excitability, transmembrane potentials, the production and nature of fibrillation, cardiac reactions to heat and cold, the importance of chemical mediators and the effects of ions. Antifibrillatory agents are thoroughly discussed and the results are all summarized in a concluding chapter.

The reviewer agrees with Dr. Wiggers, who wrote the foreword, that the monograph will be considered a classic by physiologists and should appeal to all progressive physicians and surgeons.

* * *

FIBROCYSTIC DISEASE OF THE PANCREAS—Report of the Eighteenth Ross-Pediatric Research Conference. Issued by Ross Laboratories (formerly M & R Laboratories), Columbus 16, Ohio. 92 pages.

Pediatrics is heavily in debt to the Ross (formerly the M & R) Laboratories of Columbus, Ohio, for supporting without any strings or advertising) a long series of first-class symposia on major topics of which the present is the eighteenth. In all of these a carefully selected group of leading authorities, mainly American, have participated as chairmen, speakers or discussants, and the printed volume has brought to the medical public concise but thorough reports on current thought and research, together with searching, expert discussion. In the present volume there were, in addition to the two chairmen, 12 speakers and 18 discussants. Related embryology is presented by Warkany, and exocrine function in fetal life by Vilcek (whose conclusions were questioned in discussion). Associated cirrhosis of the liver is discussed in the next chapter by Sant' Agnese. Currently great interest is attached to the abnormalities of sweat in fibrocystic disease, both as a means of diagnosis and as a cause of certain serious complications, due to excessive losses of sodium and chloride during hot weather. The basic physiology of sweating is reviewed by Cooke on the basis of his own researches, leading to the tentative conclusion that in fibrocystic disease there is a shortage of energy for sweat production, leading to a concentration of solids in the sweat. Sant' Agnese reports his findings on the constancy of the sweating defect in patients, its clinical effects, and the methods for its detection and measurement. Schwachman discusses at length the various enzymatic and other abnormalities in the duodenal fluid and the methods of determining them. Sections on the chemistry of mucus and the histochemistry of mucus and exocrine glands show few abnormalities to have been discovered as yet.

The role of the staphylococcus is discussed by Vernon Knight, together with the appropriate selection of antibiotics. Lowe's report on metabolic studies shows that patients with the disease go into negative nitrogen balance at a higher protein intake than do normal children. The secondary clinical effects of the extensive pulmonary changes are dealt with by Bruck and by Royce: Emphysema, respiratory acidosis, and cardiac failure from cor

pulmonale. Barton Childs' final section on genetics concludes that as a rule the trait is recessive.

This is a great deal of ground to be covered in 92 pages, and it is remarkable how thoroughly it is accomplished. Anyone looking for an authoritative review of the latest work (up to October 1955) on fibrocystic disease will find the volume an excellent source.

* * *

THE DIAGNOSIS AND MANAGEMENT OF UROLOGICAL CASES—Handbook—Bruce W. T. Pender, M.B., B.S., F.R.C.S., Senior Surgical Registrar, St. George's Hospital, London; James O. Robinson M.A. (Cantab.) M. Chir., F.R.C.S., Senior Surgical Registrar, St. Bartholomew's Hospital, London; Bailliere Tindall and Cox, London, 1955, 170 pages, \$5.00.

Pender and Robinson offer a short, practical outline on diagnosis and care of urologic patients in British clinics. Suitable for the undergraduate and the general practitioner, this book gives only the details of urologic investigation and pre and postoperative management. There is no discussion of pathology or surgical technique, which the authors consider to have been covered in more advanced texts. The various investigative devices and medications used in office urology are briefly illustrated and described. Some of the drugs and quite a few of the instruments used, such as Teals gorget and the Wheelhouse staff, are names and terms rarely heard in this country.

There are chapters on disease of the prostate, bladder, upper urinary tract and a very informative one on conditions affecting the penis and scrotum. The text is illustrated with simple composite diagrams depicting the causes and locations of the common urologic disorders.

The student interested in the care of cases as practiced by British urologists will find this book of value.

* * *

ATLAS OF GENERAL SURGERY—Joseph R. Wilder, M.D., Assistant Professor of Surgery, The New York Medical College. The C. V. Mosby Company, St. Louis, 1955. 222 pages, 101 plates, \$13.50.

This is a very interesting book consisting of 222 pages and 101 plates illustrating the techniques of the common surgical procedures. It is well done. Opposite each illustration there is a summary of the appropriate surgical techniques employed, to the point, well written and well illustrated and will be a very valuable asset to the library of students, house officers and physicians doing ordinary surgical procedures. It is recommended as an atlas of surgical technique for those doing standard surgical procedures. Its discussion is limited entirely to the operative attack. Evaluation of different procedures is not given but the choice of procedures recommended is good.

* * *

THE LACRIMAL SYSTEM—Clinical Application—Everett R. Veirs, M.D., Chief, Section of Ophthalmology, Scott and White Clinic, Temple, Texas; Professor of Ophthalmology, University of Texas, Postgraduate School of Medicine, Temple Division. Grune & Stratton, New York, 1955, 159 pages, \$7.50.

This text has 155 pages subdivided into twelve chapters. The subject matter is well and understandably written.

The subject is one often neglected in the average book on ophthalmology. This book fulfills the need of the average clinician and surgeon for definitive diagnosis and care of the lacrimal system.

The physiology is clearly discussed. The pathology is clearly outlined but the best parts of the book are the good illustrations and clearly described surgical procedures.

THE TRUTH ABOUT CANCER—Charles S. Cameron, M.D., Medical and Scientific Director, American Cancer Society, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1956, 268 pages, \$4.95.

Written by the Medical and Scientific Director of the American Cancer Society, this book represents a comprehensive outline of practical and useful information for the layman with clarity and facility not equaled in any other similar attempt to the knowledge of the reviewer. While the primary purpose of the book is for the relatively uninformed or in many instances, misinformed nonprofessional individual, there are some nonmedical scientists engaged in certain areas of research related to cancer who might benefit from the general orientation provided by this book. Much of the content also would be helpful to physicians who have occasion to prepare discussions on cancer for nonprofessional audiences.

There are admirable discussions of such phases as normal and abnormal growth and the spread of cancer, a realistic appraisal of heredity in cancer, explanations of common misconceptions as well as an insight into the phenomenon of quackery and a review of the field of cancer research up to the present time. The latter part of the volume presents information on cancer of specific systems and anatomical areas as well as the lymphomas and a discussion of cancer in children.

In general the author tempers the harsh facts of biologic reality with some degree of euphoria, which the reviewer considers as justifiable in the area of public education as compared to the more realistic approach to a medical or scientific audience. In the introductory chapter, however Dr. Cameron informs his readers with commendable honesty that "early diagnosis" is not synonymous with "curable cancer," and proceeds to offer a lucid explanation of unpredictable behavior of many cancers and the incurable nature of some because of their biologic characteristics. However in some areas he offers figures of potential curability for certain types of cancer which seem unjustifiable in the light of present knowledge, as for example a potential curability of carcinoma of the breast of almost 75 per cent, of the rectum to a level exceeding 70 per cent, and a potential curability with present technics, of bronchogenic cancer of 50 per cent. Whether such unrealistic figures of potential curability are justifiable for public information may be a matter of debate.

The format of the book is excellent, there are numerous schematic figures and graphs which are understandable to laymen of average intelligence, and some photographs which are well chosen and educational of the topics under discussion without being frightening even to the most fastidious cancerphobe. In particular a sequence of colored photographs is especially effective.

In summary the best comment is a repetition of the belief expressed above that this is by far the best source of information on cancer yet to be offered to the public and the volume deserves enthusiastic recommendation by the medical profession to those who want information about neoplastic disease. For interested physicians a perusal of the book in respect to technics of providing information for nonprofessional individuals is well worthwhile.

* * *

HAND SURGERY—*Surgey in World War II*—Medical Department, U. S. Army—Edited by Sterling Bunnell, M.D., Office of the Surgeon General, Department of Army, Washington, D. C., 1955. Superintendent of Documents, U. S. Government Printing Office, Washington, 25, D. C. 447 pages, \$3.75.

This text is basically documentary.

In the edition are nine chapters, each written by the Medical Officer in charge of Hand Surgery in the respective

general hospitals designated as Centers in the United States. There is, therefore, some repetition of information, but each with a different slant from the individual contributor and this feature is valuable.

The Mediterranean and European theaters of operation are each represented by a chapter, and the experiences in a debarkation hospital, as well as the overall picture in the zone of interior, are likewise presented for completeness.

The most valuable part of the book is Chapter II, where, in 75 pages, conclusions in the care of injured hands are presented in a concise, superb manner by Sterling Bunnell, the editor and guiding light of the entire program.

The book is for all surgeons seriously interested in surgery of the hand.

* * *

THE EXPRESSION OF THE EMOTIONS IN MAN AND ANIMALS—Charles Darwin, M.A., F.R.S. Philosophical Library, New York, 1955. 372 pages, \$6.00.

This so-called "new edition" is essentially a reissue of the original text plus a few additional photographs showing various animal and human communicative patterns. The original work which appeared in 1872 stressed Darwin's notions that expressive facial functions were derived from the practical functions of the muscles. Darwin believed that some expressive movements stemmed directly from original practical movements, and also that opposite emotional reactions yielded opposite facial movements.

He reports studies in the expression of animals, infants, mentally ill persons, and the paintings as shown in various culture groups. Most of the emotional patterns such as weeping, depression, elation, reflection, hatred, surprise, etc., come in for separate chapters and the book contains much interesting material for physicians which could stimulate their evaluation of patients' feelings as demonstrated by expression. It must be stressed, however, that since Darwin's text, numerous other workers have studied these problems and the general conclusion of most psychologists is that aside from smiles, no other facial posture can be considered diagnostic of any specific emotion.

As a background book this volume has already made its place in the history of emotional psychology and certainly the publisher has contributed to a new generation in making it easily and readily available although at a stiff price for a reprint. The additional material in the preface and the extra pictures are not much of a contribution, and one wishes that a really good introduction covering recent work in this field could have been appended.

* * *

RHEUMATOID ARTHRITIS AND PSORIASIS VULGARIS—Internal and Cutaneous Manifestations of Permanent Endoparasitism in the Homo Sapiens. Their Common Etiology, Pathogenesis, and Specific Vaccine Therapy—Tibor Benedek, M.D., Assistant Clinical Professor of Dermatology and Syphilology, Stritch School of Medicine, Loyola University, Chicago Medical Book Company, Jackson and Honore Streets, Chicago 12, Ill., 1955; 308 pages, \$12.00. April 11, 1956.

The author attempts to explain the etiology of psoriasis and psoriatic arthritis on the basis of a bacterial organism called the bacillus endoparasiticus Benedek 1927. The evidence presented is not conclusive or convincing. The author, on page 32 described an "x" or unknown factor which controls the release of the "endoparasites" into the view that psoriasis is of unknown etiology. The author has presented an elaborate review of his theory as to the cause of psoriasis. There is much excessive material which diverts the attention of the reader from the main theme. The author's findings are in marked divergence from the evidences of numerous studies by many investigators. This book is not recommended for general use.

Notes on the Diagnosis and Management of "Dizziness"

II. False Dizziness



1. Romberg's Sign

The patient stands with his feet together and his eyes closed. Inability to maintain equilibrium may indicate locomotor ataxia or sclerosis of the posterior columns of the spinal cord (tabes dorsalis).

2. Inability to Walk a Straight Line

3. Inability to Stand on One Foot

A patient's inability to stand on one foot without lurching may be a helpful test in distinguishing between "dizziness" which is purely psychogenic and that which is of organic origin.

False dizziness is a sensation of sinking or lightheadedness which is often of psychogenic origin. It should be distinguished from true "dizziness" or vertigo¹ in which there is a definite whirling, moving sensation.

Unsteadiness, lightheadedness and similar manifestations of false dizziness² may be psychogenic or the result of arteriosclerosis, hypoglycemia, drug sensitivity and general metabolic disturbances such as anemia and malnutrition. Hypertension is often the cause of these symptoms.

Psychogenic dizziness probably originates at the highest brain centers. It may be described as a sense of uncertainty with occasional mild lurching but not to the point of falling. In these patients there is no nausea, no disturbance of vestibular pathways and otologic and neurologic examinations are negative. The sensation is unaffected by head movement. Symptoms usually disappear³ with complete rest.

Dramamine® has been found highly effective in many of the conditions already mentioned. Maintenance therapy with Dramamine will often keep the patient from becoming incapacitated by his condition.

Dramamine is also a standard for the management of motion sickness and is useful for relief of nausea and vomiting of fenestration procedures and radiation sickness and for relief of "true dizziness" of other disorders.

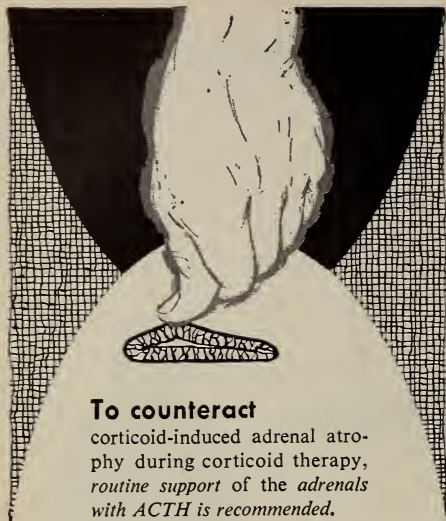
Dramamine (brand of dimenhydrinate) is supplied in tablets (50 mg.) and liquid (12.5 mg. in each 4 cc.). G. D. Searle & Co., Research in the Service of Medicine.

1. Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP 8:35 (Nov.) 1953.

2. DeWeese, D. D.: Symposium: Medical Management of Dizziness. The Importance of Accurate Diagnosis, Tr. Am. Acad. Ophth. 58:694 (Sept.-Oct.) 1954.

3. Kunkle, E. C.: Central Causes of Vertigo, J. South Carolina M. A. 50:161 (June) 1954.

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New "Take-It-Easy" Tennis Game Described

People over 50 no longer have to sit on the sidelines and watch the youngsters play tennis. Now they can get out on the court with their own "take-it-easy" brand of tennis.

The new variation, developed at the University of Florida and called "Florida tennis," makes it possible for lovers of the sport to keep on with it long after aging hearts and limbs would have relegated them to a spectator role under the old rules.

Only two major modifications of the game are needed to slow the pace, according to an article in a recent issue of *Today's Health*, published by the American Medical Association. The court is marked off half as wide as the usual singles court and there is a rule that the ball must always bounce once before being returned.

Harry J. Miller, a Sarasota, Fla., writer, said the new variation eliminates "the sudden starting and stopping, the dash back into position, the lunge for those passing shots and the youthful speed required for power volleys at the net."

"The older player can cover his court thoroughly without worrying about a skyrocketing pulse rate. His experience and skill count as much as, if not more than his physical stamina," he said.

Tests run on older people playing a regular game and a "take-it-easy" game showed that the modified game raised the pulse rate only a few points, while the regular game raised it 20 to 30 points. But more important, the elderly person's pulse rate did not return to normal during a rest period after a regulation game as did a younger person's.

Miller outlined the rules for "Florida tennis" for players under 40 and for those over 40 as follows:

For players under 40:

In singles, ordinary tennis rules prevail except the court is only half as wide as in a regulation game. The ball is served from behind center of base line into the service (front) court.

In doubles the conventional rules are used, except that players take turns hitting the ball after it is served. As each player hits the ball he retires out of his teammate's way, as in ping-pong.

For players over 40:

In singles the usual rules apply except that the net may be lowered as much as four inches from normal tennis height of 36 inches at center and the ball must always be hit into the back court after the serve. This eliminates running. If it falls into service court, it is out of bounds.

In doubles the same rules apply as for under-40 players, but the lower net may be used.

Miller also told of another variation on the game—triples. The three players on a side take turns hitting the ball. They rotate in back of the base line to keep from running into each other. The rules are the same as for doubles in the under-40 and over-40 groups.

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1. Report of Study by Army, Navy, Air Force Motion Sickness Team: J.A.M.A. 160:755 (March 3) 1956.



PFIZER LABORATORIES, Division, Chas. Pfizer & Co., Inc., Brooklyn 6, N. Y.

Medical Students' Income Sources Listed

(Continued from Front Advertising Section, Page 42)

men in managerial positions and 16 per cent of persons in professions other than medicine. The fathers of 16 per cent were deceased, retired, unemployed or their occupations not indicated.

Ten per cent of the students reported that vacation earnings represented the largest source of income, while 40 per cent reported it to be gifts or loans, averaging \$1,000 a year, from their parents. Seventy-nine per cent had no more than three sources from which they obtained money and only 11 per cent said their parents were their sole source of income.

Dr. Hess pointed out that financial aid for students is available at many schools, with 72 of the 81 approved medical schools in the country permitting freshmen to work and 78 allowing upperclass-

men to hold jobs. Forty-three schools offer scholarships and 59 offer loans to freshmen. Twenty schools give cash prizes, 72 offer scholarships and 81 offer loans to upperclassmen.

Scientists Warn of Mutation Dangers In Radiation Exposure

A 16-member Committee on Genetics, concluding a year's study under the National Science Foundation, recommends tight controls to protect the general public from the harmful effect of radioactivity on heredity. Chairman of the committee is Dr. Warren Weaver of the Rockefeller Foundation, and one of the members is Dr. Shields Warren, Boston pathologist and former medical director of the Atomic Energy Commission. Among the committee's recommendations:

(Continued on Page 52)

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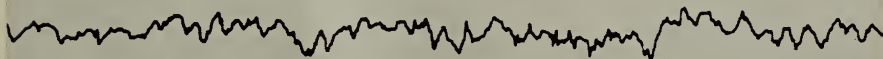
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After Raudixin. E. E. G. not altered.



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Because barbiturates and other sedatives depress the cerebral cortex, the sedation achieved is accompanied by a reduction in mental alertness.

Raudixin acts in the area of the midbrain and diencephalon, and does not depress the cerebral cortex. Consequently, the tranquilizing (ataractic) effect achieved is generally free of loss of alertness.

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Scientists Warn of Mutation Dangers In Radiation Exposure

(Continued from Page 50)

1. Medical use of x-rays should be reduced as much as possible, consistent with medical necessity; the average exposure of human reproductive cells to radiation (above the natural background) should be limited to 10 roentgens to age 30 and in no case should an individual be exposed to more than 50 up to 30 years of age.

2. Records of cumulative lifetime exposure to radiation should be kept for every person; worldwide monitoring techniques should be improved

and measurement of stratospheric storage of radiation extended; an international body should set up safe standards for marine and air disposal of radioactive materials.

One of the committee's observations: "The basic fact is that radiations produce mutations and that mutations are in general harmful. It is difficult, at the present state of knowledge of genetics, to estimate just how much of what kind of harm will appear in each future generation after mutant genes are induced by radiations. Different geneticists prefer differing ways of describing this situation; but they all come out with the unanimous conclusion that the potential danger is great."



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The isolation of rescinnamine,¹ another potent alkaloid in *Rauwolfia serpentina*, has substantiated two important points:

A—It discredits the erroneous opinion that reserpine is *the* sole active principle of *Rauwolfia*,²

B—It helps to define the advantages of Rauwiloid, the alseroxyton fraction of *Rauwolfia serpentina*, which presents desirable alkaloids³ of the *Rauwolfia* plant (among them reserpine and rescinnamine) but is freed from undesirable alkaloids and the dross of the crude root.

Pharmacologic and clinical evaluation has shown rescinnamine to be similar to reserpine in antihypertensive activity, but to be considerably less sedative and much less apt to lead to lethargy and mental depression.^{4, 5}

The interaction of reserpine, rescinnamine, and other contained alkaloids may well account for the balanced and desirable clinical behavior of Rauwiloid.

The dosage of Rauwiloid is simple and definite: Merely two 2 mg. tablets at bedtime. For maintenance, one tablet usually suffices.

1. Klohs, M.W.; Draper, M.D., and Keller, F.: Alkaloids of *Rauwolfia Serpentina* Benth. III. Rescinnamine, a New Hypotensive and Sedative Principle, *J. Am. Chem. Soc.* 76:2843 (1954).
2. Cronheim, G.; Brown, W.; Cawthorne, J.; Toekes, M.L., and Ungari, J.: Pharmacological Studies with Rescinnamine, a New Alkaloid Isolated from *Rauwolfia Serpentina*, *Proc. Soc. Exper. Biol. & Med.* 86:120 (May) 1954.
3. Gourzis, J.T.; Sonnenschein, P.R., and Bar-Allen, R.: Alterations in Cardiovascular Responses of the Dog Following Rauwiloid, an Alkaloidal Extract of *Rauwolfia Serpentina*, *Proc. Soc. Exper. Biol. & Med.* 85:463 (Mar.) 1954.
4. Hershberger, R.; Hughes, W., and Dennis, E.: Clinical Results in the Treatment of Hypertension with Rescinnamine, *Clin. Res. Proc.* 3:71 (Feb.) 1955.
5. Smirk, F.H., and McQueen, E.G.: Comparison of Rescinnamine and Reserpine as Hypotensive Agents, *Lancet* 2:115 (July 16) 1955.

Riker

LOS ANGELES

Further Reason for Thorough Cooking of Pork Given

Findings of a recent study by two Yale University investigators have given further reason for making sure that pork is well cooked.

The study gave evidence that another disease, besides trichinosis, may be acquired by eating undercooked pork. The disease, toxoplasmosis, resembles pneumonia in its symptoms.

It was studied by David Weinman, M.D., and Anne H. Chandler, M.T., New Haven, Conn. Their report appeared in a recent issue of the *Journal of the American Medical Association*.

The researchers did not prove that eating undercooked pork is the only way of transmitting the *Toxoplasma*, but they felt that they had accumulated "very suggestive" evidence incriminating it as one transmitting agent.

The disease, caused by the protozoan *Toxoplasma*, is now "extremely common," they said, although ten years ago it was considered to be rare. In fact, in some parts of the country from 30 to 70 per cent of the population in the 40 to 60 age group is infected, they said. Normally the disease is not severe and only acute cases receive much attention.

The method of its transmission is almost completely unknown. Toxoplasmosis is widespread among animals, especially pigs and rodents. It has been assumed that the infection is conveyed in some

unidentified manner from animals to man—perhaps by an insect, by handling infected animals or carcasses, or by eating contaminated food.

They found that: (1) Pigs can be infected with toxoplasmosis by eating infected rodents or pork scraps; (2) the rhesus monkey—the "conventional substitute" for man in experiments—can acquire the disease by eating infected pork; (3) persons who have trichinosis, which can be acquired only through eating undercooked pork, have a proportionately higher rate of toxoplasmosis than do normal persons.

Toxoplasmosis can occur in persons who do not have trichinosis. This means that, unlike trichinosis which can be transmitted only by pork, there is more than one source of toxoplasmosis, they said. Just what the other sources might be remains to be discovered.

In addition to demonstrating that pigs and rhesus monkeys can be infected, the investigators found through various tests that the *Toxoplasma* organism in pork can survive the usual temperatures and periods of pork storage. It survives in a cyst-like mass called a pseudocyst, which protects it not only from freezing, but also from the effect of gastric juices. This means that the organism might enter the body through the walls of the stomach, as well as through the walls of the mouth or respiratory tract. Cooking will destroy the cyst and the *Toxoplasma*, they said.

(Continued on Page 58)

HOW DAVIS TECHNIQUE EXPLODES HIDDEN TRICHOMONADS



Too often treatment fails to cure vaginal trichomoniasis because parasites survive and set up new foci of infection.

Now you can overcome this problem with VAGISEC® liquid and jelly, using the Davis technique.† VAGISEC liquid dissolves mucinous materials, penetrates thoroughly, and quickly reaches and explodes the hidden trichomonads.

Proved highly effective. VAGISEC liquid (originally "Carlendacide") is the formula developed by Dr. Carl Henry Davis, noted gynecologist and author, and C. G. Grand, research physiologist.¹ Clinical data show better than 90 per cent success with VAGISEC liquid in the treatment of vaginal trichomoniasis.²

Overwhelmingly powerful. VAGISEC liquid explodes trichomonads within 15 seconds after douche contact!³ One chelating agent and two surface-acting agents, combined in balanced blend, attack the parasite to weaken the cell membrane, to remove waxes and lipids, and to denature the protein. With its

cell wall destroyed, the trichomonad imbibes water, swells and explodes.

The Davis technique. VAGISEC liquid, as a vaginal scrub, is used in the office therapy. VAGISEC liquid and jelly are prescribed for home use.

Prevent re-infection. Many wives become re-infected because husbands harbor trichomonads.² To prevent re-infection, prescribe the protection afforded by Schmid prophylactics. When a rubber is preferred, prescribe the superior RAMSES® prophylactic, transparent and tissue-thin, yet strong. If there is anxiety that rubber might dull sensation, prescribe XXXX (FOUREX)® skins, of natural animal membrane, pre-moistened. At all drug stores.

References: 1. Davis, C. H., and Grand, C. G.: *Am. J. Obst. & Gynec.* 68:559 (Aug.) 1954. 2. Davis, C. H.: *West. J. Surg.* 63:53, (Feb.) 1955. 3. Davis, C. H.: *J.A.M.A.* 157:126 (Jan. 8) 1955.

†Pat. App. for.

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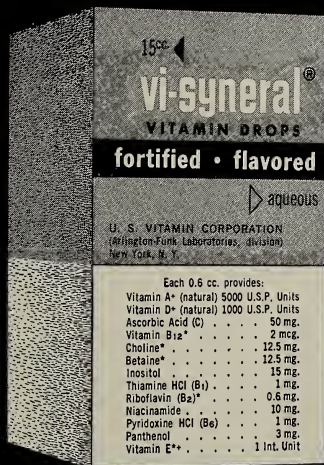
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Further Reason for Thorough Cooking of Pork Given

(Continued from Page 54)

They also found several factors which would aid in the spread of the disease and make it difficult to identify. Pigs, once infected, remained so for at least a year, while rats remained infected for at least seven months. The long persistence of an organism in the tissues helps its spread, especially in situa-

tions where the organism has several carriers, they said.

Toxoplasmosis has no fixed incubation period, which makes it impossible to trace a mass outbreak to the consumption of an article of food at a common meal. Furthermore, unlike the *Trichinella* worm, the *Toxoplasma* is not readily identified in sections of infected pork because of its much smaller size and more haphazard distribution in the tissues.

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Thoracic Surgery, One Week, October 1
Esophageal Surgery, One Week, September 24
Breast & Thyroid Surgery, One Week, October 22
Gallbladder Surgery, 3 Days, October 29
Fractures & Traumatic Surgery, Two Weeks, October 15
- GYNECOLOGY · OBSTETRICS**—Obstetrics & Gynecology, Three Weeks, October 22
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Vaginal Approach to Pelvic Surgery, One Week, September 10
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Gastroscopy & Gastroenterology, Two Weeks, September 10
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Small Plastic Plug Replaces Silver Tracheotomy Tube

The ungainly and uncomfortable silver tube used to maintain an airway in postpoliomyelitic patients has, in some cases, been replaced by a small inconspicuous plastic plug.

Drs. Harry J. Jacobs and John E. Affeldt, Hondo, California, reported in a recent issue of the *Journal of the American Medical Association* on use of the plug in 114 postpoliomyelitic patients.

The tube or plug is used to prevent healing and closure of an artificial opening, called a tracheostoma, in the trachea. The opening, made through the throat, allows paralytic patients to breathe.

The new plug overcomes several disadvantages of the older open silver tube. The plug is smaller and made of polyethylene plastic which does not cause a tissue reaction or leave a bad taste or odor.

The plug, held in place by a chain or tape tied around the neck, facilitates neck movements. Because it does not touch the back of the trachea, it gives some patients the feeling that air is obtained more readily.

"A beneficial cosmetic effect" from the new plug is noted among women patients. It is smaller and its color makes it less conspicuous than the silver tube, they said.

The plug can serve as a step in the weaning procedure from the tracheotomy tube to complete closure of the opening, the doctors said, or it may serve as a permanent replacement for the tube. One special advantage of the plug is that it reduces the number of cleanings of the opening required during the day. In addition, its removal and reinsertion is easier than that of the tube.

Drs. Jacobs and Affeldt commented that the new

(Continued on Page 74)



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Sodium Pantothenate	10 mg.
Ascorbic Acid (C)	300 mg.
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Resuscitate Patient Who Dies Outside Operating Room

Bringing the dead to life even outside the operating room is no longer impossible, Drs. Claude S. Beck, Elden C. Weckesser, and Frank M. Barry, Cleveland, recently stated.

Restoration of heart beat after sudden death has been achieved frequently during surgery, and the emergency measures used are almost routine in the operating room. However, the physicians reported one of the first known cases of resuscitation of a patient who died outside the operating room.

"The death factor in coronary artery disease is often small and reversible. . . . The heart wants to beat and often it needs only a second chance," they said in a recent issue of the *Journal of the American Medical Association*.

However, the second chance must be given immediately—almost within seconds—by persons trained in emergency resuscitation. "It is not impossible" that someday properly trained and equipped teams may extend the use of emergency treatment outside the hospital, they said.

Their patient, a 65-year-old physician, had suffered heart distress, and early symptoms of a myocardial infarction were shown by electrocardiogram taken just before he collapsed on June 22, 1955. He was immediately rushed to the operating room, where it was found that the heart had definitely stopped. "The man was dead," the authors reported.

Within two minutes artificial respiration and oxygen administration were begun, followed by hand massage of the heart, and electric shock.


Exactly one-half hour after he collapsed, his heart started beating by itself. Six days later he was cheerful, well-oriented and normal and five days later he was discharged from the hospital. He has now returned to practice.

Throughout the half-hour, oxygen circulation in the brain was maintained by artificial methods, to prevent the cell damage which results if the brain is deprived of oxygen for longer than four minutes. The only adverse effect experienced by the patient was that he had no memory of the 36 hours immediately following the attack.

A number of electrical shocks were administered to the heart, in order to stabilize the electrical charges within its various areas.

The doctors explained that coronary artery disease kills in two ways. Ninety per cent of the deaths are due to electrical instability, while the rest are due to muscle failure in hearts that remain electrically stable. Both electrical instability and muscle damage are related to oxygen content in the muscles. Differences in oxygen content of adjoining areas of muscle produce currents that kill.

(Continued on Page 14)



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Resuscitate Patient Who Dies Outside Operating Room

(Continued from Page 10)

In one-third of the cases, electrical instability kills without muscle damage, and in the remainder the muscle destruction is not so great but that the heart could keep beating, they said.

By equalizing the oxygen content and producing electrical stability through resuscitation methods, many persons whose attacks are caused by electrical instability could perhaps be saved, they said, again pointing out that trained personnel and the proper equipment must be immediately available.

They also mentioned two other cases of resuscitation following death outside the operating room. One occurred in Chicago, with Dr. C. David Brown, Chicago, successfully resuscitating the patient, while Drs. L. B. Regan, K. R. Young and J. W. Nicholson of Mt. Holly, N. J., reported a second case (in the March, 1956, issue of *Surgery*). Their patient developed electrical instability of the heart while a cardiogram was being taken in the emergency ward, on April 13, 1953.

The authors are from the departments of surgery of Western Reserve University and University Hospitals, Cleveland.



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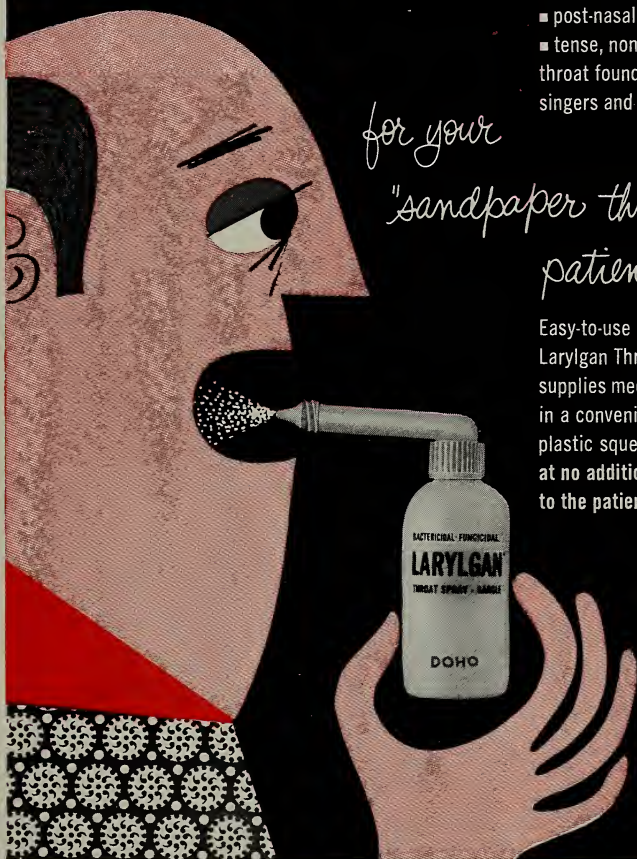
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Physician Discusses "Emotional Heart" of a Child

A child has two hearts—the physical one and the emotional one, Dr. Willis J. Potts of Children's Memorial Hospital, Chicago, said recently.

The physical heart is "a rugged mechanism that will tolerate the ravages of infection, the scars resulting from impaired blood supply, and the approaches of surgeons' tools," he said. But the emotional heart is "a delicate mechanism, sensitive to the slightest wound of fear, insecurity, indifference, thoughtlessness and misunderstanding."

Doctors often must deal with both hearts, but even when they are not working with the physical heart they must consider the emotional one, Dr. Potts said in a recent issue of the *Journal of the American Medical Association*. The emotions aroused in children by encounters with doctors and nurses, long hospital stays and surgical operations can leave deep and serious psychological scars.

Little children are afraid of doctors because of previous unpleasant procedures to which they have been subjected. "We might as well admit it—until we have completely won the confidence of children we are ogres to them," Dr. Potts said. He added that it is possible to win them over with patience, a smile, a fundamental love of children and "a cultivated tolerance of their eccentricities."

But a doctor's primary concern is with the effect upon the emotions of the infant or child whose illness is severe enough to require hospitalization and operation. During a prolonged hospitalization the child needs more than the minimum of attention. Even under the most hygienic surroundings the child will develop poorly—physically and mentally—unless he gets "essential tender, loving care."

To many children a hospital experience is a nightmare, he said. Before the age of reason, a child is unable to comprehend why he should be separated from his mother. Nurses frequently can act as substitute mothers to the very small child, but the three or four-year-old wants his "mommy."

Dr. Potts said, "To mothers I suggest that the child be given the attention he craves, sick or well. A sick baby in the hospital should be visited every day, and at the earliest possible date he should be taken home. There is no place in the world like home for a child. Even the poorest home, where there is accord, is better than the finest hospital."

"If the child must remain in the hospital long, visit often and crowd in as much attention as possible during those few hours. Whatever spoiling may be done during the visiting hours will be counteracted during the rest of the day and night. The child will naturally cry when the parent leaves,

(Continued on Page 24)

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1. Hardin, J. H.; Levy, J. S., and Seager, L.: *South. M. J.* 47:1190, 1954.

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1. Braceland, F.J.: Texas State J. Med. 51:287 (June) 1955.

2. Lemere, F.: Northwest Med. 54:1098 (Oct.) 1955.



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Physician Discusses "Emotional Heart" of a Child

(Continued from Page 20)

but return visits will dispel the fear of being forgotten or deserted."

Children from five to eight years of age are often equally unhappy, but can be steered into a better frame of mind during the long 21 hours between visiting periods, by nurses, residents or interns. These, with "a cultivated sixth sense," make the children feel they have not entered "torture chambers but have been admitted to a place where folks are going to help them get well and where they are interested in their happiness."

Dr. Potts said reactions of children entering a hospital for operations vary from childish bravado to sheer panic. One seven-year-old, when he learned that he would not need an operation, made a gesture of wiping sweat from his brow and exclaimed, "Boy, that was a close one." Another little boy said in response to what he considered bad news, "You know what? Lions eat people and I hope they eat you." Dr. Potts commented, "One will not have to worry that such children will have repressions."

He said that children from stable, closely knit, rural families are especially cooperative in the hospital. Other children, who have few restrictions at home also learn to cooperate when they are in the

(Continued on Page 42)



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*Schwartz, E.: New York J. Med. 56:570, 1956.

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Two parasitic infections, found in an estimated 19 million Americans, can now be cured within a week because of the simplification of an old treatment method.

Piperazine citrate (Antepar) has been used for several years to treat enterobiasis and ascariasis, but the treatment was extended over periods of 7 to 21 days with several doses of the drug given each day.

Now piperazine citrate, given in large daily doses for seven instead of 14 days, has cured 58 of 60 patients with enterobiasis. One large dose cured ascariasis in 34 of 46 patients and two doses cured it in 50 of 53 patients, Harold W. Brown, M.D., Kam-Fai Chan, M.D., and Kathleen L. Hussey, Ph.D., of Columbia University College of Physicians and Surgeons, New York, said in a recent issue of the *Journal of the American Medical Association*.

It is estimated that 16 million persons in the United States are infected with the pinworm *Enterobius vermicularis*, while more than 200 million persons in the world harbor it. Unlike many intestinal parasites, it is not limited to the rural and poor classes, but is found in all urban economic groups.

Until recently the "drugs of choice" for treating enterobiasis were gentian violet and oxytetracycline (Terramycin), but many persons cannot tolerate gentian violet and oxytetracycline is expensive.

Previously piperazine was given for seven days, discontinued during a seven-day rest, then given for seven more days. The rest period allowed immature worms—not affected by piperazine—to grow into the mature, susceptible stage. However, it was found that eggs remained in the body during the rest period, making possible self-infection as well as spread of infection to the patient's family.

The seven-day treatment, in which one massive dose is given daily before breakfast, prevents such infection and reduces the expense by lowering the amount of piperazine needed, they said. The one massive dose increases the drug's effect on the worms by raising the concentration in the intestinal tract. In a schedule of several small doses given with meals, some of the drug's effectiveness apparently is lost because more of it is absorbed from the tract.

With ascariasis, two large doses of piperazine have been found to be just as effective as several small doses spread over five days, the authors said. They tried giving one massive dose of piperazine in an attempt to increase the efficiency of treatment and to reduce cost. It was effective in 74 per cent of the 46 cases. Two large doses in two days were effective in 94 per cent of the 53 cases.

(Continued on Page 38)

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Paralyzed Polio Patients Safely Undergo Surgery

Paralyzed polio victims who are dependent on mechanical respirators may undergo "practically any" surgical procedure with little more risk than the normal individual, provided they receive special care and preparation, three Michigan physicians said recently.

Drs. Thad H. Joos, Norman S. Talner and James L. Wilson of the University of Michigan School of Medicine Poliomyelitis Respirator Center reported on 17 paralyzed patients who safely underwent various types of surgery. None developed any respiratory complications, which might have been expected in such a group, the doctors said.

The 17 patients, who ranged in age from 16 to 35 years, underwent a total of 21 operations between January, 1952, and December, 1955. Fourteen of the operations were major and seven were minor. The operations were performed from six months to eight years after onset of the disease.

The doctors said in a recent issue of the *Journal of the American Medical Association* that medical preparation of the paralyzed patient for surgery is similar to that used in any normal person, except that the patient is sent to the operating room in a chest respirator.

The psychological preparation is, however, "another story." The paralyzed patient must be re-

assured that his breathing will not stop during surgery and that others have undergone the operation successfully. He should be accompanied to the operating room by someone he knows and trusts. A preoperative visit by the anesthesiologist has been of "inestimable value" in the preparation of their patients, the authors said.

Standard anesthetics were used during the 21 operations. With a general anesthesia a throat tube was employed which gave them control of breathing and allowed the patients to breathe easily during surgery and until they were placed in a "tank" respirator after surgery.

The anesthesiologist accompanied the patients to their rooms after surgery to control their respiration. Most of the patients needed help in the form of a tank respirator during the first 12 to 16 hours following surgery. Patients who had abdominal incisions needed the tank respirator longer since the chest respirator caused pain in the incision for the first 10 to 12 days. The rocking bed was used successfully by these patients between the third and seventh postoperative days. All of the patients returned to their preoperative breathing schedule within 20 days.

The authors concluded that impaired respiratory function should not be considered as an impediment to any surgical procedure ordinarily considered necessary.



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(Continued from Page 28)

The two-day course of therapy has a special advantage in clinic practice and mass-treatment programs, they said. The first day's treatment can be administered by the physician and an additional safe amount can be given to the patients to be taken at home the next day.

Of the estimated 600 million persons in the world with *Ascaris lumbricoides*, three million live in the mountainous and hilly areas of the southern United States.

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tient on the first, second, or third day of treatment. The ascarides are immobile and relaxed, although not dead. Apparently the piperazine produces a state of drugged relaxation in the worms which prevents them from pressing against the intestinal wall and maintaining their position.

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Riker

LOS ANGELES

Physician Discusses "Emotional Heart" of a Child

(Continued from Page 24)

hospital for long periods. In fact, they actually enjoy the intelligent restrictions of an orderly life, he said.

It is well to prepare the child for what is in store for him, Dr. Potts said. Operations should be explained; most children adjust quite well. One child said after the explanation about anesthesia and operation, "you don't have to tell me all that stuff. I know about it—I saw it on TV." Another youngster, whose mother had told her that she was entering the hospital for "another test," informed her mother that she knew it was for an operation. Frightened children need reassurance from parents, nurses and doctors.

"Children are such amazing little creatures," Dr.

Potts said. "Tell them in simple words why they have to go to the doctor or the hospital or why they have to have an operation and, in most instances, they will cooperate in a fashion that adults might well emulate. Faith and trust are completely unspoiled when children are dealt with honestly. So little effort; so great the reward."

He said, "The mystical heart of a child is a precious and beautiful thing. It is marred only by wounds of a thoughtless and not too intelligent world." The emotional heart is especially vulnerable during episodes of illness and efforts should be made to avoid wounds that will leave irreparable scars.

He concluded, "I am convinced that the heart of a child sunned by love, security, and understanding will be able to withstand the storms of illness and pain."



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The regulation, effective on August 9, provides that expenditures for education are deductible if they are for a "refresher" or similar type of course taken to maintain the skills directly and immediately required by the physician in his employment or business. An educational course to be covered should be designed for established medical practitioners to help them keep abreast of current developments in the profession; it should be of short dura-

tion; it should not be taken on a continuing basis, and should not carry academic credit. Education designed to prepare the practitioner to enter a specialty will not be acceptable.

When a physician travels away from home primarily to obtain "refresher" education, his expenditures for travel, meals, and lodging while away from home are deductible. However, expenses for personal activities such as sightseeing, social visiting or entertaining, or other recreation will *not* be allowed.

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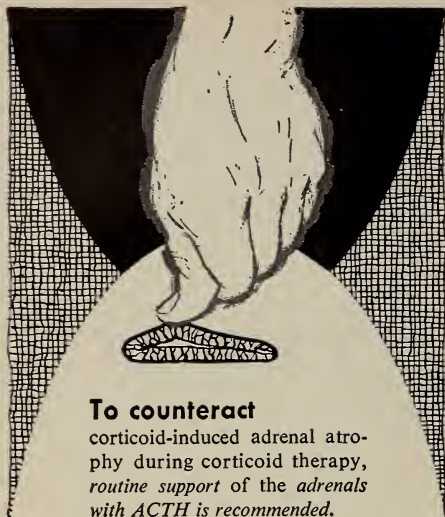
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"Sun-Tan Pills" Still in Experimental Stage

The American Medical Association warned against overoptimism about a new "sun-tan pill."

Mrs. Veronica Conley, Chicago, secretary of the American Medical Association's committee on cosmetics, said that 8-methoxypsoralen (Oxsoralen), which has been hailed as an oral sunburn preventive, has many "encouraging aspects, but until more is known about its reliability and toxicity it remains an experimental drug."

The drug has been used to treat vitiligo, a skin disorder, with some success. However, because of its potency and toxic side reactions, it should be used only under strict medical supervision, she said in a recent issue of *Today's Health*, published by the American Medical Association.

The compound comes from the Egyptian plant called Ammi Majus Linn, a member of the carrot family. In crude powdered form it has been used for centuries by the Arabs of Egypt for vitiligo, a condition in which the skin is mottled because of a disturbance in the pigment-forming mechanism. The lightly pigmented areas are particularly susceptible to sunburn, a major problem in warm climates. In addition, the cosmetic aspects of the disease cause universal concern.

When Arabs survived the drug's toxic side effects which range from severe abdominal cramps to nephritis, hepatitis, cirrhosis and prolonged coma—the skin condition did improve.

While experimenting with the compound for vitiligo, investigators noted its effects on normal skin, which gave rise to the idea of a "sun-tan pill." However, too little is known about its suntanning effect on normal skin to justify overoptimism about a pill, she said. There is need for a more effective means of preventing sunburn while promoting a tan. A product which can be taken in capsule form has many advantages over locally applied sun-tan preparations, but approximately three years of testing in this country and centuries of use in Egypt in the crude form have not proved the drug "either safe or useful for all."

In treating vitiligo, 8-methoxypsoralen has produced uncertain and unpredictable effects. Patients show varying degrees of repigmentation, but rarely if ever does a complete repigmentation or cure occur, even temporarily, she said. There are a number of unpleasant side effects, and long range toxic symptoms have not yet been analyzed.

Mrs. Conley said 8-methoxypsoralen has stimulated a whole new field of research. It not only offers hope to patients afflicted with a disfiguring skin disease but also may serve as a base for the study of related compounds which will be safer and more useful.

She concluded, "Oxsoralen has shown many encouraging results: Further study is needed to prove its usefulness and safety for suntanning."

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Cancer of the Lung

What Should Be the Present Approach?

JULIAN JOHNSON, M.D., D.Sc. (Med.), Philadelphia

THERE SEEMS to be very little doubt that cancer of the lung has increased in frequency, not only in this country but in the European countries in which this problem has been studied in recent years. There are some observers who feel that this increase is simply a matter of increased recognition of the disease. Others believe it is due primarily to the increased life expectancy of the population. Still others are of the opinion that the greater consumption of tobacco, especially cigarettes, by the American public has played an important part in the increased incidence of cancer of the lung in this country. Whatever the cause may be, there can be no doubt that cancer of the lung is a very frequent tumor in men and is one of the major cancer problems at present.

The general public has every reason to ask, "What has the medical profession to offer the patient with cancer of the lung?"; and the medical profession has every reason to ask, "What should our present approach be to cancer of the lung?"

As far as we are aware at present, surgical operation offers the only hope of cure of cancer of the lung. When the involved lung is removed before there is demonstrable spread of the tumor to the lymph nodes or to the adjacent structures, the

• The best opportunities at present for improving the results in the treatment of patients with cancer of the lung are by way of (a) utilizing the information obtained on routine x-ray examination of the chest, (b) decreasing the delay between the time of the first symptoms and the time the patient consults a physician, and (c) decreasing the delay between the time the patient first consults a physician and the time the cancer is surgically removed.

The medical profession must increase its index of suspicion of cancer of the lung and persist in efforts to make a diagnosis when lung cancer is suspected.

Exploratory thoracotomy should be used in suspicious cases when the diagnosis cannot be established by other methods.

chances of a five-year survival approximate 50 per cent. Unfortunately, in less than half the patients subjected to pneumonectomy are the lymph nodes free of demonstrable metastasis, so that the five-year survival for all patients in whom pneumonectomy is accomplished approximates 20 to 25 per cent. Again unfortunately, in a third or more of the patients operated upon the lung cannot be resected and, moreover, approximately 30 per cent of the patients with lung cancer are shown to be inoperable even without exploration. This leaves a discouragingly low salvage rate of from 5 to 10 per cent for five-year survival of patients with cancer

Guest Speaker's Address: Presented before the First General Meeting at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

Professor of Surgery, School of Medicine and Graduate School of Medicine, University of Pennsylvania, Philadelphia.

of the lung who enter any large medical center at present.

Since a surgeon is discouraged by these figures, it is natural that he should try to improve the salvage rate by becoming more and more radical in the type of operation employed. A radical pneumonectomy may now involve the removal of large segments of the chest wall, the diaphragm, or major parts of the mediastinal structures, including parts of the auricles or great vessels. Many surgeons feel, however, that major inroads into the ravages of this disease are not likely to be made by further increasing the extent of the resection. Data are not yet available to show that this radical approach to the surgical treatment of cancer of the lung will increase the number of surviving patients at the five-year period.

Inasmuch as the salvage rate may be as high as 50 per cent when the tumor has not obviously spread beyond the lung, it seems quite obvious that if all patients could be operated upon at that stage, the salvage rate would be increased five to tenfold. It may well be, therefore, that until some major advance in the therapy of cancer is discovered, the chief hope for increasing the salvage rate for cancer of the lung is in earlier diagnosis. There appear to be three methods by which patients might be brought to operation sooner. First, a wider use of routine x-ray films of the chest. Second, education of the public to seek medical advice earlier. Third, the training of all physicians to recognize the disease and bring the patient to operation earlier. These points will be discussed briefly.

1. There can be little doubt that if the entire population, or even men over 40 years of age, had x-ray examination of the chest every six months, many asymptomatic lung cancers would be detected. However, there are data available which suggest that there would be less than one asymptomatic cancer of the lung found per thousand chest x-rays. It is difficult to know, therefore, whether a wide-scale program of routine x-ray examination of the chest should be carried out solely for the purpose of picking up cancer of the lung. There can be no doubt, however, that routine use of x-ray examination of the chest has increased greatly throughout the country in recent years. It is obviously the duty of the medical profession to take advantage of the information obtained by these x-ray films. When a lesion is picked up on such a routine examination, that information should be pursued to its logical conclusion; physicians should not sit by with the advice to the patient of, "Don't bother it until it bothers you."

2. In a recent Philadelphia series of patients with cancer of the lung, it was determined that there had been a three-month delay between the time of

the first symptoms and the time the patient consulted a physician. The American Cancer Society has played a prominent part in trying to reduce this period of "patient delay." There are persons who have doubted the wisdom of spreading knowledge concerning the symptoms of cancer because of the fear of causing cancerphobia in a large segment of the population. It is difficult to believe, however, that the dissemination of such knowledge would be detrimental to the common good.

3. In the same series that showed that the patient delay in cancer of the lung was three months, it was found that the "physician delay" was five months. In other words, there was a delay of five months between the time the patient first consulted a physician and the time he came to operation. Certainly it behooves the medical profession to reduce this delay on the part of the physician once the patient has presented himself. The lay press is filled with articles which indicate to the general public that cancer is curable if the patient will only consult a physician soon enough. To that information should be added the necessity of the physician's recognizing the disease once he is presented with it and proceeding with the proper treatment.

There can be no doubt that even if every patient presented himself to a physician as soon as it reasonably could be expected on the basis of symptoms, and if the physician always recognized the disease and had the patient operated upon immediately, a 50 per cent five-year survival could not be approximated. Not only would the surgeon frequently find microscopic metastasis in the lymph nodes, but often the lesion would be grossly nonresectable, even with ideal performance on the part of the patient and medical profession.

A case in point is that of a 56-year-old man who consulted a physician because of a mild irritating cough of only three weeks' duration. It can be assumed that there are few physicians who would seek medical advice because of a mild cough of such short duration. It is also probable that if physical examination showed no abnormalities the vast majority of physicians in this country would have given this patient some cough medicine and sent him on his way or suggested that he come back if the cough did not improve. However, the physician in this particular case happened to have an x-ray film of the chest made. A suspicious lesion was noted on the right side. A bronchoscopic examination was negative but a Papanicolaou smear was positive for carcinoma. The patient was operated upon within a month of the very first symptom. It was thought that this would be an early lesion, but it was found that there was widespread metastasis over the visceral and parietal pleura. Operation was hopeless.

The author has seen at least one patient in whom a lesion discovered on a routine chest survey was found to be inoperable before the patient had a single symptom. Such experiences are discouraging. Indeed, a few physicians after such experiences are likely to adopt an attitude of hopelessness. They forget that such is the exception and not the rule. Fortunately, all cancer of the lung does not behave in such a manner. Certainly lung cancer may manifest itself in many ways and, whereas some grow and spread rapidly, others grow and spread slowly.

An example of a slow growth of lung cancer may be illustrated by the case of a 38-year-old man who was discharged from the army because of hemoptysis. He had had three bouts of hemoptysis over a three-year period and had been studied extensively in the army. He was finally discharged from the army with a tentative diagnosis of tuberculosis although no organisms were ever found. A year later a shadow appeared in the right lower lobe. The physician who was caring for him, thinking that tuberculosis had finally showed its hand, put him to bed. After a year of bed rest it was evident that the lesion was growing but the sputum never was positive for tubercle bacilli. For that reason the patient was operated upon and a bronchogenic carcinoma was found. Although this lesion was known to be present for over a year and had probably been present for five years, it was still apparently a small one and confined to the lung. At last report the patient had gone for an additional nine years since pneumonectomy with no evidence of recurrence.

The two cases just cited certainly point up the fact that there is a tremendous variation in the course which cancer of the lung may take. It means that the index of suspicion of the medical profession must be brought to its very highest peak. One of the greatest errors a physician may make after he suspects lung cancer is to give up too soon in his efforts to establish the diagnosis. In dealing with this problem he should remember that persistence is a virtue. If he suspects cancer of the lung, certainly he should not be satisfied with a single x-ray film of the chest. A case in point will show how easy it is to make this error.

A 50-year-old man went to a physician because of a cough and a little blood-streaked sputum. Quite rightly the physician suspected cancer and an x-ray film of the chest was ordered. It was reported as negative. The physician made the mistake of accepting this report as sufficient evidence that the patient did not have cancer. He did not remember that cancer of the bronchus is not likely to be visualized on a plain film of the chest until it gets large enough to obstruct the bronchus enough to cause atelectasis behind it. In order to pick up such an early lesion in the bronchus, bronchoscopic examination is nec-

essary. Had this been done in this case a specimen of the tumor could have been excised for biopsy at once. Unfortunately, the physician took the report on the x-ray film as the last word. Also unfortunately, the tumor did not bleed again and the patient became content with his "cigarette cough." When he finally had another bout of hemoptysis eight months later the tumor was found to be still resectable but there was metastatic growth in the mediastinal lymph nodes. Had the physician followed up his suspicion with enough persistence to use the diagnostic methods available, the patient would have been operated upon eight months earlier and might well have been cured.

Another case may be cited which presents the importance of persistence in trying to make the correct diagnosis. A 56-year-old man had noticed some increase in his usual "cigarette cough." An x-ray film showed nothing but slightly increased markings at the base of the right lung. Upon bronchoscopic examination some granulation tissue in the bronchus was noted but a biopsy of a specimen showed only inflammatory tissue. A bronchogram showed slight bronchiectasis. Question arose as to why bronchiectasis should develop in a man in his fifties, or whether he had had this for years and it had only become somewhat more symptomatic recently. A second biopsy was also negative for cancer, but a third biopsy did show cancer of the lung. Here persistence was indeed a virtue, for when the lung was removed there was no evidence of spread of the lesion beyond the local site and at last report, ten years after pneumonectomy, the patient was still living. Had the physicians involved given up after one bronchoscopic biopsy there might well have been six to twelve months' delay before the patient was operated upon.

In trying to get a patient with cancer of the lung to operation at an earlier time in the course of the disease, it is perfectly obvious that the physician should attack first of all the problem of the physician delay. Certainly he should use every diagnostic method at his disposal, including exploratory thoracotomy.

METHODS OF DIAGNOSIS

X-ray. A careful roentgen study of the chest will reveal carcinoma of the lung in most of the patients with this disease at a stage in which it is possible to recognize the disease by any of the available techniques. One situation where the x-ray may be entirely negative is that of a small tumor in a bronchus, not causing obstruction. In this situation a bronchoscopic examination fortunately will usually lead to the diagnosis but it does mean that one must not be content with an x-ray alone when there is a persistent cough, especially with blood-

streaked sputum. It should be pointed out also that a simple plain x-ray film of the chest does not constitute a careful roentgen study of the patient. By using various of the newer techniques such as body section films, a lesion can frequently be picked up which could not be definitely identified otherwise.

A vast majority of the errors are made, however, in not getting an x-ray in the first place or in misinterpreting the film once it has been obtained, rather than in the imperfections in present technique. It is well known, however, that small lesions in the lung fields are frequently missed and it is not at all unlikely that with improvements in x-ray technique considerable improvement may be made in this regard. The greatest mistake, however, is not made in a lesion which cannot be seen by x-ray but in misinterpreting an x-ray film to indicate some type of inflammatory disease in the lung rather than a malignant lesion.

The classic example is the patient with a cough who finally begins to have fever. Then an x-ray film shows infiltration in one lobe and it is attributed to "virus pneumonia" and the patient is given antibiotics. The fever subsides and no further x-ray films may be made until repeated infection occurs some months later. This, of course, is due to carcinoma of the lung in its early stages. Bronchial obstruction results in retained secretions. When the infection occurs behind the obstruction a diagnosis of inflammatory disease is entertained. The fact that this infection may be controlled by antibiotics is perhaps unfortunate, as it is likely to delay by weeks or months the true diagnosis, for not only may the infection subside but the x-ray shadow produced by the infection may decrease, if not entirely disappear.

It is an unhappy fact that about 40 per cent of the patients operated upon for cancer of the lung have previously had a diagnosis of inflammatory process in the lung and have been treated for that condition, thereby delaying the diagnosis and treatment of the cancer. In the early days the diagnosis in such cases was "bronchopneumonia." Later it was "atypical pneumonia," and still later "atypical atypical pneumonia." More recently the diagnosis has been "virus pneumonia." The pathologic changes remain the same—namely, partial or complete bronchial obstruction by the cancer with infection behind it. Fortunately, well-trained radiologists more and more are recognizing such lesions as being due to cancer.

It should be emphasized that there is a tremendous difference between a single x-ray film of the chest and a careful examination made by a competent radiologist. Early lesions may often be identified by thorough study although missed on a single film. Careful fluoroscopic examination with inspiration and expiration films may occasionally pick up

an early lesion causing abnormalities in ventilation. The various techniques of body section films have also proved to be of great benefit in the early diagnosis of cancer of the lung.

Bronchoscopy. Bronchoscopy is the next most important diagnostic method when dealing with lung cancer. The cancer may be located where it can be visualized bronchoscopically and a tissue diagnosis made by actual biopsy in about 25 per cent of the patients with bronchogenic carcinoma. In addition, the bronchial secretions may be studied and a positive diagnosis made by the Papanicolaou technique in another 25 to 50 per cent, depending upon the experience of the bronchologist and pathologist. There are always some instances, however, in which a positive diagnosis cannot be arrived at by these techniques. It is fortunate, however, that the lesion which is least likely to be seen bronchoscopically is the one that is most likely to be seen on the plain film of the chest, so that further diagnostic efforts will be mandatory.

Aspiration Biopsy. It has been the author's belief that biopsy of material aspirated through a needle inserted into the lung has its chief usefulness in patients who are considered to be inoperable but in whom it is desirable to have a positive tissue diagnosis. When it is thought that the lesion is operable, there would seem to be little point in aspiration biopsy. If carcinoma cells were obtained, operation would be the next step. On the other hand, if carcinoma cells were not obtained upon aspiration, the operation could not be avoided, for fear that carcinoma was present and had simply been missed by the aspirating needle. It has been felt, therefore, that since the results of the aspiration will not influence whether or not the patient is to be explored, it is not worth the risk of transplanting tumor cells to the chest wall.

Exploratory Thoracotomy. Thoracic surgery has now reached a point where exploratory thoracotomy may be considered to be just about as safe as exploratory laparotomy. For many years exploratory laparotomy has been done to determine the nature of doubtful masses in the abdomen. It is evident, therefore, that the time has come when, if dealing with a mass in the thorax the nature of which is not certain, an exploratory thoracotomy should be done. The tumors in the large bronchi are usually accessible for a positive diagnosis by bronchoscopic examination. The peripherally located tumors are the most amenable to diagnosis by exploratory thoracotomy. It is felt, therefore, that when there is any real question of the diagnosis of a lesion in the chest demonstrated by x-ray, the patient should have the benefit of exploratory thoracotomy. This, of course, does not mean that every effort should

not be made preoperatively to make the diagnosis and possibly avoid exploratory thoracotomy in those instances in which the thoracotomy is not required for therapy. This is particularly true, of course, in the various types of lymphomas, as well as in inflammatory disease, especially tuberculosis.

At present there are approximately eight million x-ray films of the chest made in this country each year, either as a matter of routine or because of symptoms. A great many asymptomatic lesions are being discovered. The author strongly believes that when a mass lesion is discovered and a positive

diagnosis cannot be arrived at otherwise, exploratory thoracotomy should be performed. Many early lesions are being removed in this manner.

If the medical profession is to reduce the delay in getting patients with carcinoma of the lung to operation once the patient has presented himself, physicians must, first, increase their index of suspicion of cancer and, second, persist in efforts toward the diagnosis of such lesions. Exploratory thoracotomy should be undertaken for suspicious lesions if the diagnosis cannot be made otherwise.

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Management of Nephrosis

The Use of Long Continued Hormone Therapy

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IT IS BECOMING increasingly apparent in both adults and children that nephrosis occurs as a distinct clinical entity. It is characterized by the insidious onset of edema with or without a history of previous illness, proteinuria, hypoproteinemia and hyperlipemia. Transient azotemia, hematuria and hypertension may occur.

The usual natural course of nephrosis is marked by exacerbation and remission of the signs and symptoms for an average duration of two years. Rarely a patient recovers after a single episode of anasarca. Unfortunately, a slightly greater number show nephritic signs (hematuria, hypertension, azotemia) early in the disease which are persistent and progress unrelentingly to renal failure. Whether therapy of any kind offers relief to such patients is extremely doubtful. However, it is equally questionable that the outcome for the majority of patients between these extremes is settled at the outset and not influenced by the chronic nature of the disease. For these patients, management is directed at control of the edema and other apparent abnormalities such as proteinuria with the hope that the basic lesion may be corrected and the development of permanent renal damage prevented.

Prior to chemotherapy, approximately 50 per cent of patients with nephrosis died of infectious processes, particularly peritonitis. Observation of nephrotic patients in whom adequate chemotherapy controlled intercurrent infections indicated that approximately 50 per cent of these patients survived longer only to die in renal failure.^{21,7} Regardless of the duration of the nephrotic symptoms, it is impossible to predict the outcome until signs and symptoms of progressive renal failure develop. Some observers have found early persistent hypertension indicative of a poor prognosis.¹⁹ On the other hand, other investigators noted that hypertension present for more than a year could be relieved by adequate therapy² or might disappear spontaneously.⁷

Management of nephrosis has been directed at the

• The course of nephrosis in 36 children was evaluated. Twelve of 24 who received no treatment or short-term courses of steroids died. Eleven of the 24 had been well for six months to five years at the time of this report.

Twelve patients received steroids by schedule over extended periods. One died and eleven had been free of signs and symptoms of nephrosis for four to eighteen months at the time of report. In only two cases was therapy discontinued. It seems evident that these patients are experiencing a better state of well-being. Whether or not the prognosis is being altered for any single patient cannot be determined.

elimination of the edema because spontaneous recovery is preceded by diuresis and because in this way the patient can be made more comfortable. A variety of means has been used—administration of agents to increase oncotic pressure, diet or ion exchange resins for control of sodium intake, diuretics or excessive water intake to increase salt and water excretion, mechanical removal of edema fluid, pyretic agents and a number of hormones, desiccated thyroid and particularly adrenal steroids. A few of these are listed in Table 1. Two hyperoncotic agents, salt-poor albumin¹⁵ and dextran^{5,20} cause diuresis of water and salt promptly after pronounced increase in plasma volume. Febrile episodes following such infections as measles⁶ and malaria² are also followed by diuresis and remission in a significant number of cases. A recent report of Gilbertsen and Bashour² is especially interesting: Four of five patients with signs of chronic renal failure had complete remissions with relief of azotemia and hypertension for 11 to 20 months after therapy with malaria. It is evident from this incomplete presentation of published data that the over-all experience with adrenal hormones has been most uniform. In general, short-term courses of cortisone, hydrocortisone or corticotropin given by intramuscular or intravenous routes cause diuresis in approximately 80 per cent of patients.^{4,18,22,23,25}

The almost invariable relapse after initial treatment led to the administration of repeated courses of adrenal hormones, as many as ten courses being given to a patient.⁴ There is no predictability as to which course in a series in a given patient will

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TABLE 1.—Results of Therapy with Various Agents

Agent	Patients		Investigators
	Number	Per Cent with Diuresis	
Salt-poor albumin..	13	54	Luetscher, et al.
Dextran	16	37	James, et al.
.....	12	60	Olive, et al.
Measles	12	75	Janeway, et al.
Malaria	5	80	Gilbertsen, et al.
Steroids for edema	88	74	Rance, et al.
.....	64	81	Heymann, et al.
.....	47	81	Metcoff, et al.
.....	34	82	Rapoport, et al.

produce favorable results. Observations made during the course of diuresis brought about by adrenal hormones soon indicated that profound physiological alterations were occurring in addition to loss of excess salt and water. In Table 2 are listed some of the significant changes. Renal function improves^{1,11} and the abnormal serum electrolytes, protein²⁷ and lipids revert toward normal. There is a decrease in the elevated, circulating antidiuretic hormone¹² and in the urinary excretion of the salt-retaining hormone, aldosterone.¹⁴ The rise in serum complement merits an additional word. Lange¹⁰ interpreted the rise of serum complement as indicative of cessation of the disease process. He considered nephrosis a disease of "complement-binding" antigen-antibody reaction and expressed belief that cortisone and corticotropin act by the depression of certain antibodies. In experimental work on rats with the nephrotic syndrome this theory was demonstrated very nicely.³ Unfortunately, the cause of the human disease remains obscure.

Cognizant that adrenal hormones were doing more than producing diuresis, Kramer and co-workers⁸ began to treat nonedematous patients. A second course of corticotropin was given a week or two after hormone-induced diuresis. Continued improvement with frequent return to normal of proteins and lipids and pronounced extension of the period of remission were observed.

Long-term courses of hormone therapy followed. Lange and co-workers⁹ induced diuresis with corticotropin, 100 units to 200 units per day given for ten days. If diuresis did not occur, treatment was repeated with a larger dosage. After diuresis occurred, cortisone was given by mouth, 100 mg. every eight hours for three consecutive days each week. If the patient weighed more than 40 pounds, 400 mg. per day was given. The intermittent therapy was continued for one year. Discontinuing the hormone was done by increasing the interval between the courses rather than by diminution of the dosage. Of 29 patients, 28 were edema-free after three to 40 months of therapy, 14 of 23 patients did not have proteinuria.¹⁰

TABLE 2.—Physiologic Changes Following Steroid-Induced Diuresis

- Improvement in renal function.
 - Increase in glomerular filtration rate.
 - Decrease in clearance of albumin.
- Metabolic alterations.
 - Decrease in urinary excretion of aldosterone.
 - Increase in serum proteins with improvement in electrophoretic pattern.
 - Decrease in circulating antidiuretic hormone.
- Influence on basic lesion.
 - Return of serum complement to normal levels.

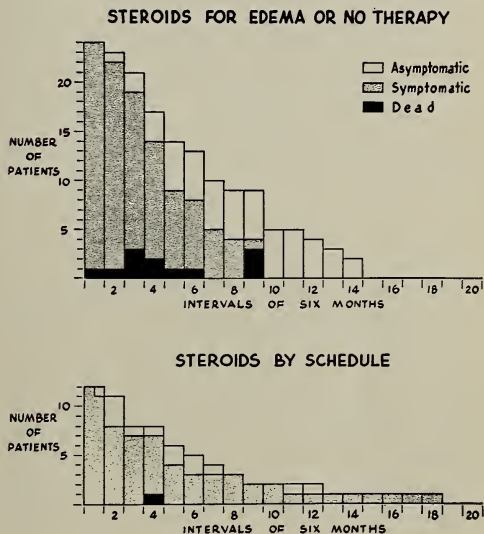


Chart 1.—Summary of course of nephrosis in 36 children, plotted in six-month intervals of disease.

Merrill¹⁷ recommended daily administration of corticotropin-gel, 1 unit per pound of body weight until edema and proteinuria were eliminated. The same dose was continued for two additional weeks then halved by giving it every other day for two weeks. Gradual reduction of the dosage followed for the next 12 weeks. If the patient remained free of proteinuria, the injections were given only twice weekly for an additional four weeks. Of 26 patients, 24 were free of edema and proteinuria. Nine of them had had no treatment in 18 months. This type of management is recommended only for children, as the large doses are not well tolerated by adults.

It is apparent that success of treatment can only be established after many years of following great numbers of patients. However, Riley²⁶ attempted to evaluate, in a statistically acceptable method, various types of therapy in fluctuating clinic populations on a yearly basis. The course of nephrosis in 533 pa-

tients, as determined by records collected from many hospitals, was analyzed. No difference in mortality rate was observed as between patients receiving no therapy and those receiving steroids for edema only. However, a pronounced decrease in mortality was noted in patients treated with steroids by schedule. Obviously, as Riley emphasized, the data are not suitable for statistical analysis. However, the evidence seemed to suggest that giving steroids by schedule prolongs life in childhood nephrosis.

The author's limited experience in this regard is presented in Chart 1. Of 24 children who received no therapy or steroids for edema only, 12 are dead and one was lost to follow-up after two years of active disease. The remaining 11, after having disease for six months to four and a half years, had been well for six months to five years of observation at the time of this report. Patients who continued to have active disease are among the 12 children who have been treated with scheduled steroids. One was seen after two years of disease, received continuous therapy for two months with no response, and died in renal failure. Four patients received continuous steroid therapy at the beginning of the disease, became symptomless promptly and are still receiving therapy. Two completed courses of scheduled steroids and have been free of symptoms for approximately one year. The remaining four, ill for three to nine years, have been receiving steroids for the last 15 to 16 months. Two are free of symptoms; the other two have continuing proteinuria and one is also hypertensive.

The usual course of therapy followed for these patients, which is somewhat similar to that of Merrill, is illustrated in Chart 2. The patient, the case shown in Chart 2, a two-year-old boy, was hospitalized with a history of edema and proteinuria of nine days' duration. After a diagnosis of nephrosis was established, corticotropin-gel was given, 1 unit per pound of body weight daily for three weeks. Diuresis had begun and proteinuria had already abated at the time therapy was started. At the end of three weeks the patient was discharged from the hospital, still receiving corticotropin-gel in dosage of 1 unit per pound of body weight every other day, prophylactic doses of tetracycline, extra potassium, and with moderate salt restriction. The mother gave the injections of steroid at home and tested daily samples of urine for protein with 20 per cent sulfosalicylic acid. The patient was seen by a physician weekly until December 1955 and monthly thereafter. In these 12 months he had two episodes of proteinuria associated with infection. Both times the corticotropin was increased and was given daily, in addition to adequate chemotherapy.

Data on the more complicated case are shown in Chart 3. The patient, a two-year-old boy, had symp-

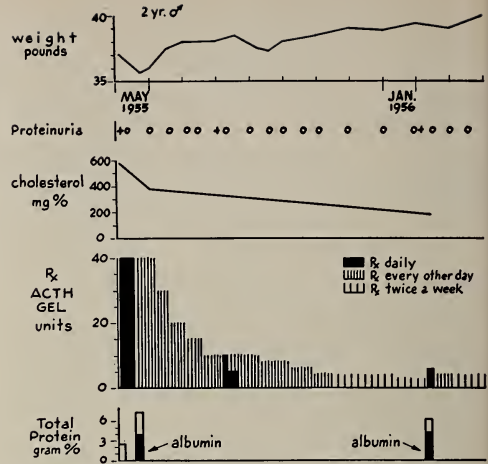


Chart 2.—Data on steroid therapy in a 2-year-old boy with nephrosis of recent onset.

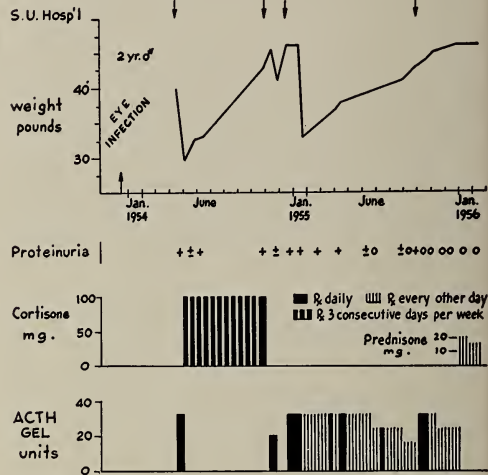


Chart 3.—Data on steroid therapy in a 2-year-old boy with nephrosis of four months' duration.

oms of nephrosis for four months before he received steroid therapy. First he received cortisone, 100 mg. daily for three weeks. Diuresis occurred and proteinuria abated, and the patient then was given a maintenance dosage of cortisone, 100 mg. daily for three consecutive days of each week. However, as Lange emphasized,⁹ this dose is inadequate. Three months later, while still receiving the prescribed therapy, he had a relapse and was given cortisone daily by a private physician. Due to parental anxiety, he was returned to Stanford Hospital where cortisone was given daily for a total of 14 days. After five days without treatment, as there was no response, corti-

cortropin-gel was given, 25 units daily for 14 days. After this there was increased urination but not complete diuresis, possibly because of an intercurrent infection. The patient went home for a while, then returned in four weeks and again was given corticotropin-gel, 1 unit per pound per day. Abrupt diuresis occurred on the 23rd day of therapy. During this period of rapid loss of weight, the patient had generalized convulsions for 48 hours. Blood pressure and the potassium, bicarbonate, calcium, phosphate and urea contents of the serum were normal. As in similar cases reported in the literature,⁴ no cause was immediately evident. For the next eight months, therapy was determined by an effort to control proteinuria. The patient was discharged from the hospital on corticotropin-gel, 40 units every other day. He received this in the pediatric clinic where he was observed by one physician. After a two-to-four-week interval of no proteinuria, the dosage was lowered or the interval increased to twice a week. Repeated infections accompanied by return of proteinuria made reducing the amount of steroid a slow process. After nine months of therapy, in September 1955, a relapse occurred with edema in addition to proteinuria. The patient was hospitalized and given corticotropin-gel, 40 units daily. Immediately the slight edema disappeared and the urine became protein-free. A change to prednisone by mouth then was made, and at last report the patient had remained free of symptoms for four months.

Questions as to amount and duration of steroid therapy cannot be answered. Rapoport and McCrory²⁴ divided 42 patients with nephrosis into two groups, one group made up of those who became free of proteinuria in four to eight weeks of intensive cortisone therapy; the other of those who did not. All patients in the group who continued to have proteinuria for two years became chronic nephritics, and the ultimate fatal outcome was not influenced by steroid therapy. On the basis of their observations, these investigators considered the determination of clearance of protein a very useful prognostic tool.¹⁶ They seriously questioned the advisability and need of prolonged steroid therapy in patients who rapidly became free of proteinuria.

Nevertheless, from observations of the small group of patients reported upon herein and the many reported upon in the literature it seems evident that with intensive steroid therapy nephrotic children are maintained in better health, that the edema which makes them so susceptible to infections is controlled and that perhaps mortality is lowered.

A discussion of intensive steroid therapy is not complete without emphasis on the dangers of such treatment. Categories of disturbances which require therapy are listed in Table 3. During intensive steroid therapy, the glomerular filtration rate may

TABLE 3.—Complications of Steroid Therapy

1. Renal Failure.
2. Derangement of serum electrolytes.
3. Infection.
4. Thrombosis.

be lowered, and edema, serum potassium and urea may increase. For these reasons, it is exceedingly ill-advised to give potassium by mouth at this stage unless a need has been demonstrated. Blood pressure may increase with accompanying encephalopathy. Hyponatremia, hypokalemia or excessive dehydration may occur during diuresis.¹³ In a patient receiving steroid therapy, signs of infections may be masked and the infection spread rapidly. Thrombotic phenomena that may occur in nephrosis may be precipitated by hormone therapy. It seems evident that treatment with steroids must be individualized for each nephrotic patient and the patient diligently watched.

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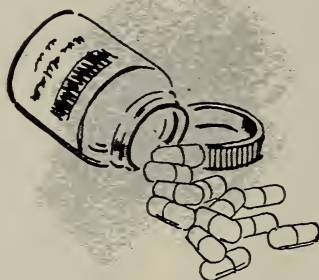
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Endometriosis

A Review

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THAT THERE IS GREAT INTEREST in endometriosis is well borne out by the accumulated literature on the subject since Sampson's⁵¹ paper on perforating hemorrhagic cysts of the ovary appeared in 1921. A condition which seemed rare as a gynecological entity in the twenties is today one of the most common causes of pelvic invalidism in this country, either as a single pathological condition or in association with other pelvic diseases such as fibroids, chronic inflammatory disease, ovarian neoplasms and adenomyosis. It may occur rarely in a teen-aged girl but is most prevalent in the third and fourth decades of life. The process is one occurring during the menstrual life of woman but has been found after the menopause in association with other pelvic disease such as granulosa cell tumors, fundal adenocarcinomas and myomas.

The diagnosis of endometriosis is on the increase. This is shown by the statistical reports of numerous investigators on proven microscopic studies of the pelvic tissues removed at laparotomy. Still, many cases with gross characteristic changes are diagnosed at the operating table but the diagnosis is not substantiated by the pathologist at later study. Many times the specimen looks different after standing, and the smaller lesions cannot be recognized in the laboratory unless definitely marked at the time of removal.

The medical profession is also more alert to the pelvic symptoms and changes associated with endometriosis. This has led to a more critical survey of the history of this condition and to closer observation and examination of patients both pelvicly and rectally. Nevertheless, if there is also some other pelvic pathologic condition to confuse the issue, the presence of endometriosis may remain obscured until direct observation is made at the operating table.

The incidence in various classifications of patients has been reported by a number of observers, and it is obvious from these studies that endometriosis is a disease of white women in the higher economic brackets. This fact led Meigs³² to postulate that the reason endometriosis is more common in patients observed in private practices is that young women in

• Endometriosis, the cause of which is unknown, is on the increase. Treatment is surgical—conservative in the childbearing years. Hormonal therapy is sometimes palliative for a time, and the disease may regress during pregnancy. Endometriosis of the bowel should be borne in mind in the differential diagnosis of partial obstruction.

The literature contains reports of 14 cases of ovarian carcinoma arising from endometriosis.

this stratum marry later in life and have fewer pregnancies than do those who are observed in clinics. He expressed belief that infrequent interruptions of menstrual cycles due to present day contraception and late marriages may well account for this greater number of cases of endometriosis. Infection does not seem to increase the incidence, as it is uncommon in the negro race.^{18,44} Blinik and Merendino³ noted endometriosis in 0.11 per cent of 4,477 cases in which laparotomy was done in the Harlem Hospital. It is also rarely encountered in South America, as cited by Greenhill¹⁸ from the observations of Correa de Costa in 1946, who noted 32 cases of endometriosis in 2,285 laparotomies, an incidence of 1.44 per cent. Data from various investigators may be compared in Table 1.

The cause of endometriosis is still unsolved although a great amount of clinical and experimental work has been reported in the literature to clarify understanding of this moot question. Sampson's⁵⁴ theory of tubal regurgitation of menstrual fluid with implantation and seeding of viable menstrual endometrium is yet to be proven. To be sure, endometrium has been transplanted in various animals and organs, but no one has proven that shed menstrual endometrium is capable of transplanting itself nor that this tissue is viable. Specimens of endometrium removed by curette at the time of menstruation and then implanted have grown, but this is in all probability impertinent, for undoubtedly the specimen obtained by this means is endometrium of the basal layer, which is known to be prolific. Tissue cultures have shown that endometrium taken at the time of menstruation is less viable than that taken during the proliferative phase. Desquamated or dislodged mucosa has been seen in the lymphatic and venous spaces, but whether this tissue is capable of implantation and growth is problematic. Keettel and

Chairman's Address: Presented before the Section on Obstetrics and Gynecology at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

TABLE 1.—Incidence of Endometriosis as Reported by Various Investigators

Reported by	Year of Report	Number of Laparotomies	Cases of Endometriosis	Incidence (Per Cent)
Sampson	1925	332	98	29.5
Fallas and Rosenblum	1940	15,975	....	1.62
Meigs	1941	400 (Private practice	144	36.0
		400 (Clinic	33	8.3
Holmes	1942	307	80	26.0
Haydon	1934	620	52	8.4
	1940	713	94	13.1
Correa de Costa	1946	2,285	33	1.44
Scott and Te Linde	1950	516	....	15.9

Stein²⁸ reported successful tissue culture of cast-off menstrual endometrium with the addition of penicillin and streptomycin for bacteriostasis. Te Linde and Scott⁴⁸ and Allen, Peterson, and Campbell¹ produced experimental endometriosis in monkeys by various operative procedures. Te Linde and Scott believed their work substantiates Sampson's theory, but this has been challenged by Novak and others who favor the Iwanoff-Meyer theory of coelomic metaplasia as the cause of endometriosis. Allen, Peterson, and Campbell¹ conjectured from their experimental work that if menstrual discharge does bring about endometriosis, there must be an irritating substance as an etiologic factor that passes through the myometrium and mucosa. Their experiments in monkeys with the transected cervix implanted extraperitoneally suggested heteroplasia rather than transplantation, and this view supports the coelomic metaplasia theory. Scott and Te Linde⁴⁸ took venous blood from a monkey's vein at the time of menstruation and injected it intraperitoneally in four animals without bringing about endometriosis. This suggests very strongly that venous blood lacks some component substance that is capable of causing coelomic metaplasia and resulting endometriosis.

The coelomic metaplasia theory in simple form merely is that the müllerian duct is derived from the embryonic coelomic epithelium and mesenchyme, and forms most of the female genital tract, including the endometrium. Other adult tissues derived from coelomic epithelium may retain the potentiality of forming tissue which is indistinguishable from endometrium. Just what stimulates this differentiation of tissues, whether hormones or what not, is still a mystery. It is felt by most investigators that this theory explains most adequately the greatest distribution of endometriosis, coupled with an embryologic basis, as explained by Gruenwald.

Another theory known as the "metastatic spread" theory was offered by Halban and Sampson and was championed by Javert.²⁴ This really deals with a mode of spread rather than the cause of endometriosis. It explains very well the involvement of lymphatic nodes in the pelvis, the groin and along the channels to the round ligaments, and venous chan-

TABLE 2.—Fertility in Patients with Endometriosis as Reported by Various Investigators

Reported by	No. Cases	Per Cent Fertile
Counsellor	131	32.1
Payne	238	40.0
Haydon	168	53.0
Keene and Kimbrough	118	40.9
Jenkinson and Brown	39	34.0

nels through the vertebral circulation to distant points of involvement, such as the arms and legs. But whether these findings within lymph nodes are due to metastasis of endometrial cells or are due to metaplasia of the lymphatic endothelium and stromal cells is not known. Nor is it known if the endometrial tissue within these lymphatic spaces or venous spaces is capable of propagation. It is generally felt that no single explanation seems to fit all situations, but that one theory may be applicable in some cases and another theory in others.

The symptoms of endometriosis vary in frequency and intensity, although in this regard some of the reported variation may depend upon the observers evaluation. Some patients with extensive involvement in the pelvis may have little in the way of pelvic discomfort or pain, while others with small lesions along the uterosacrals and in the cul de sac may complain bitterly of dyspareunia and pressure on the rectum with pain extending to the back and radiating down the legs. The classical symptoms of progressive dysmenorrhea, menorrhagia, metrorrhagia, dyspareunia and infertility may all be present or lacking in an individual case. At times menorrhagia is a prominent symptom, particularly if associated with other pelvic pathologic conditions such as fibroids, endometrial hyperplasia or polyps. On the other hand, with minimal lesions it may be entirely absent as a symptom. Infertility is relative and frequently is the factor that causes the patient to consult a physician. Reynolds and Macomber expressed belief that the normal fertility rate in marriage is about 88 per cent. In patients with endometriosis, the percentages of fertility noted by various investigators are shown in Table 2.

Because pregnancy is frequent enough following

conservative operation, when it is possible in endometriosis, the surgeon must always bear in mind the importance of preserving the childbearing function. The treatment should be individualized to suit the case under consideration, for it is impossible to make rules to fit all cases. If the disease is not too extensive, conservative operation should be employed to preserve the possibility of future pregnancy, with the patient's full understanding that further operation may be necessary in the future.

In the majority of cases, as was pointed out by Sampson,⁵⁴ the tubes may be patent (both tubes were patent in 284 of 293 cases of endometriosis). The ovaries may be extensively involved but the endometrial cysts may be dissected out and some ovarian tissue conserved. Smaller areas of endometriosis may be resected or destroyed by cautery unless they involve the muscle layer of the bowel, particularly in the rectovaginal septum. If, however, one explores a patient of any age and there is found extensive involvement with implants involving the sigmoid, rectum or ileum, it may really be conservative to be radical and remove both ovaries, both tubes and the entire uterus. If that is done, the residual small endometriomas in the bowel wall will regress and the bowel will return to normal function, unless too much scarring has occurred. In that event resection may become necessary. The ovaries should never be removed and the uterus left in situ. Total hysterectomy should be practiced if it is at all possible without adding too much risk to the patient's survival. With extensive involvement in the cul de sac and rectovaginal septum, great care must be exercised not to injure the rectum; this entails staying in good cervical tissue in the dissection and leaving endometriosis on the bowel wall. Many observers have set 45 years as the age limit for conservative operation if the patient desires to have a family; and they carry out radical operation if the patient is beyond this age. One must still keep in mind that the treatment of endometriosis is surgical and therefore destructive in principle. Since ovarian function is essential in the metabolism of bone and skin of woman, this tissue should be conserved whenever and for as long as possible.

Physicians must keep the possibility of endometriosis in mind and include it in differential diagnosis if the more unusual lesions of the intestinal tract are to be recognized. Recurrent abdominal pains and symptoms of partial obstruction appearing during the premenstrual phase must arouse suspicion of bowel endometriosis. The sigmoid and rectum are more frequently involved than the small bowel. The lesion encroaches on the bowel lumen from without and a mass may be palpated on rectal examination. The patient may have pain on defecation, particularly during menstruation, and there may be a slight

amount of rectal bleeding at this time if the lesion has eroded the bowel mucosa. Proctoscopic examination may show the mucous membrane to be intact and x-ray examination may be of great aid in such cases by showing an extrinsic lesion with normal appearing mucosal pattern. The crux of the situation is that the lesion may be confused with carcinoma of the rectum or sigmoid and a colostomy performed for a benign tumor. This should not occur if one keeps the possibility in mind. Examination of a frozen section before definitive operation is done may save the day. Proper bowel preparation is imperative if there is a possibility that resection of the large bowel will be carried out. However, as was stated before, the bowel lesions will recede with total ablation of the ovaries, so resection is rarely necessary.

Obstruction of the ileum by endometriosis presents a less characteristic picture than that of the large bowel. Vomiting is a frequent symptom, diarrhea is infrequent and constipation is rare. X-ray films may demonstrate obstruction of the small bowel. It may be confused with appendicitis and certainly will be missed in the differential diagnosis unless endometriosis is constantly kept in mind and the symptomatology is correlated with the menstrual cycle. A pelvic and combined rectal-pelvic examination may aid greatly in the diagnosis, if endometriomas are palpable in the cul de sac or along the uterosacral ligaments.

Endometriosis is probably much more often associated with pregnancy than one would be led to believe from the current literature. Many women become pregnant with minimal lesions and the diagnosis is not made during the prenatal examination, delivery, or puerperium because the course has been normal and nothing has brought the condition to the attending physician's attention. The most common site is in the cul de sac, the rectal shelf or along the uterosacral ligaments. The lesions usually increase in size and are firm until about the fourth month; then they begin to soften and recede, so that at times it is difficult to know such a process is present unless it had been previously noted.

In 1944 Scott⁴² searched the literature for cases of endometriosis complicated by pregnancy. He found reports of 11, involving the posterior cul de sac or rectovaginal septum. The ovaries were involved next most frequently. There were four such cases and he added reports of two more, in one of which the patient had a ruptured ovarian endometrioma, caused by tearing of adhesions by the enlarging uterus. In the second case the patient, in early pregnancy, had a right ovarian cyst the size of a grapefruit. At operation there was found also a small chocolate cyst on the left ovary, which could be resected. There were adhesions between the right

ovary and broad ligament, and in the region of the lower segment and sigmoid colon. This area was stained with old chocolate material, although no leaking area could be demonstrated. The postoperative course was uneventful and antinatal progress was normal. Spontaneous labor occurred in the thirty-fifth week and a boy weighing 2,390 gm. was delivered. The blood pressure and urine were normal but the placenta showed a small area of separation.

Scott also noted reports of cases in less common sites associated with pregnancy—two cases of cervical endometriosis, one case in the anterior cul de sac, one case in the inguinal canal associated with endometriosis of the appendix, and one case of endometriosis of the ileum with rupture of the viscus and generalized peritonitis. He emphasized that the medical profession should be cognizant of the potential problems that can arise in pregnancy with endometriosis, although most cases terminate in an uneventful manner.

Following are reports of two additional cases in which pregnancy was complicated by endometriosis.

CASE 1. The patient, a housewife, became pregnant for the first time after nine years of marriage. The last menstrual period had been January 11, and the estimated date of confinement was October 18. Catamenia had begun at age 13 and periods had been regular with dysmenorrhea and backache the first day. The prenatal course and results of physical examination and laboratory studies were all normal until September 27, when the patient complained of pain in the left lower quadrant of the abdomen, radiating to the flank and down the left leg. There was no regularity to the pain but it was constant and sharp in character. The patient was hospitalized for observation. Upon physical examination, increased tone and generalized tenderness over the uterus were noted. Fetal heart tones were normal. Shortly after entering the hospital the patient had some painless vaginal bleeding for the first time. A diagnosis of premature separation of the placenta with concealed hemorrhage was made and cesarean section was carried out. A boy weighing 7 pounds 4 ounces was delivered.

The placenta was separated by an old clot of approximately 350 to 500 cc. The uterus was mottled and did not contract well despite massage, intravenous administration of ergotrate, injection of pituitrin into the muscle and hot packs. The uterine wound was closed in layers and the bladder flap of peritoneum was about to be sutured in place when it was decided to remove the uterus because of uterine apoplexy (*Couvellaire uterus*). On the left ovary was an endometrioma that had torn prior to operation and was leaking thick old chocolate material which had stained the posterior leaf of the broad ligament and rectosigmoid. The right ovary was plastered down to the right broad ligament by an extensive endometriotic process and the cul de sac was obliterated by an endometrioma. A right sal-

pingo-oophorectomy, subtotal hysterectomy and resection of the left ovary were accomplished. The postoperative course was uneventful. The patient was examined regularly thereafter, and nine years later the patient complained for the first time of a feeling of pressure in the lower abdomen and rectum, radiating into the low back. Androgen therapy relieved the symptoms.

CASE 2. A white housewife, 26 years of age who had been married four and a half years without becoming pregnant sought examination for determination of fertility. Catamenia had begun at age 14. Periods lasted four days and were 24 to 25 days apart. Bleeding was scant. The patient had backache but not dysmenorrhea. Third degree retroposition of the uterus and slightly tender small nodules in the cul de sac were noted upon pelvic examination. The nodules were believed to be endometriotic. In the succeeding four months the nodules in the cul de sac increased in size and became more tender. The patient complained of dyspareunia. Laparotomy, right oophorectomy, a Coffey suspension and appendectomy were carried out. The cul de sac was obliterated by endometriosis, a firm adhesive process.

Some three months after operation the patient became pregnant. Slight vaginal bleeding in the third month of pregnancy was controlled by bed rest and administration of stilbestrol. Otherwise the prenatal course and results of physical examinations and laboratory studies were all normal.

Two weeks before the estimated date of confinement the patient complained of left lower abdominal discomfort and pain radiating into the rectum and inner aspect of the left thigh. The pains were not regular. On the way into the hospital the patient had a severe vaginal hemorrhage. Conditions noted at examination were compatible with premature separation of the placenta. The baby was well engaged, fetal heart sounds were satisfactory and they were heard in the left lower quadrant of the abdomen.

Cesarean section was carried out. When the peritoneal cavity was opened, some free blood was encountered and there was blood staining of the uterine serosa. A 6 pound 6 ounce girl was delivered. Upon exploration of the pelvis after the cesarean section, a small left ovary with decidual reaction was noted. The tubes appeared normal, and apparently the endometrioma in the cul de sac had been changed by decidual reaction and had become bisected by the development of the lower uterine segment so that the serosa of the lower uterine segment, the cul de sac and the rectum had the shaggy appearance of the separation of two slices of bread and butter. The serosa exuded free blood, which undoubtedly accounted for the blood in the peritoneal cavity and the bizarre symptoms, not pertinent to the onset of labor, complained of by the patient.

Three and a half years later the patient became pregnant again and after a normal prenatal course a normal term boy was delivered by cesarean section. Upon exploration of the cul de sac at that

time some old thickening was noted, but no definite endometrioma.

The medical profession is cognizant of improvement during pregnancy in patients with endometriosis, but neither the nature nor the cause of this change is understood. Maybe the second of the two cases reported, and others like it, will help toward a clearer understanding of how nature manages to improve the lesions.

Some investigators have noted similarity of the change that endometriosis undergoes during pregnancy to the change that takes place when large doses of estrogenic hormones are employed. Karnaky,²⁶ Hurxthal,²³ and Cooke⁶ reported cases in which dramatic change was noted during estrogenic therapy. The treatment must be carried out for a period of three to nine months or more and, unfortunately, endometriosis returns after a variable length of time. There are very definite side effects with this mode of treatment, such as hemorrhage, psychosis, increased pigmentation, edema of the vulva and other manifestations of water imbalance. Since only a short period of relief is obtained, some investigators have expressed preference for use of the male hormone. Even with androgens, however, there are undesirable effects that must be watched for, such as water imbalance, hirsutism and voice changes. These effects are usually avoided by small doses, 300 mg. or less a month, but even so the possibility of side effects should be explained before therapy, lest the patient suffer psychic embarrassment.

Still, surgical operation in some form is the treatment of endometriosis. It should be conservative when possible, but the probability that further operation may be necessary in the future should not be minimized. It is important to avoid castration as long as possible because of the undesirable postmenopausal changes in skin and bone. At times x-ray therapy to the remaining ovarian tissue after conservative operation may be necessary, particularly in the presence of bowel involvement. X-ray should never be used without surgical proof of existing endometriosis—certainly not on clinical suspicion alone. Presacral sympathectomy and ovarian neurectomy in association with conservative operation have been advised by numerous investigators, but as time moves along there are fewer ardent advocates for these procedures.

Another facet that must be touched upon is the possibility of malignant disease arising from endometriosis. It is taught in medical schools and mentioned in textbooks that here is a lesion which invades its neighboring structures like a malignant growth but rarely takes on the potentiality of a carcinoma. Novak,³⁵ Scott,⁴³ Sampson⁵³ and others have questioned the histologic derivation of certain carcinomas of the ovary as arising from endometri-

osis. The condition is rare, to be sure, but undoubtedly a possibility. It is difficult to prove, because usually when an ovarian carcinoma comes to one's attention it is so extensive that it would be folly to hazard a guess as to origin. Sampson⁵³ postulated very rigid criteria for such a diagnosis: The co-existence of benign and malignant tissue in the same ovary which have the same histologic relationship to each other as in endometrial carcinoma of the uterine corpus; the carcinoma must be seen to arise in this tissue and not to be invading it from some other source. Additional evidence includes the finding of tissue resembling endometrial stroma surrounding characteristic glands with old hemorrhage.

Scott⁴³ in 1953 found reports of 12 cases in the literature, and Postloff and Rodenberg³⁷ in 1955 found 13 cases of carcinoma of the ovary that fulfilled Sampson's conditions for proving endometrial origin. They added one case of adenoacanthoma, bringing the number to five reported cases to arise from endometriosis, in which it was possible to demonstrate both benign and malignant lesions in the same tissue. Fourteen cases out of the total number of cases of endometriosis is certainly a very few, but it is probable that if all cases were reported the incidence would be greater.

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Serum Transaminase

A Test to Aid in Diagnosis of Cardiac Infarction

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A SIMPLE and inexpensive laboratory test to aid in the diagnosis of myocardial infarction is now available.^{1,3} The basis of this test can be stated in general terms. When tissue is severely damaged the cellular contents may find their way into the circulating blood. If there is in this material a substance which is characteristic of the tissue involved and this substance is stable in the blood and capable of being analyzed, the means are then at hand for an analysis of blood which will indicate specific tissue destruction. The test under discussion is based on the observation that the enzyme glutamic-oxalacetic transaminase meets these criteria. It is present in high concentration in heart muscle, in somewhat lesser concentrations in skeletal muscle and in decreasing concentration in other tissues. The amount in normal blood is quite low. Within a few hours following myocardial infarction the amount of transaminase in the blood increases, a peak being reached within 12 to 24 hours. The amount of the enzyme then decreases rapidly until a normal value is again observed four to six days after the infarct.

The relationship between the amount of transaminase in tissue and the amount which appears in the blood following damage to that tissue is not a simple one, as can be shown by a few examples. Brain tissue is relatively high in transaminase content, but infarction does not cause this enzyme to appear in the blood.² While the liver tissue is considerably lower in transaminase than heart muscle, damage to the liver gives rise to very much greater values of transaminase in the serum than is the case with myocardial infarction.⁵ Although the mechanism involved is far from completely understood, it does appear that the level of transaminase in serum is elevated when there is extensive and rapid damage to certain of the tissues which contain large quantities of transaminase.

Although many diseases have been studied, only a few cause an increase in serum transaminase.

- Within 24 hours following myocardial infarction there is a pronounced increase in the level of the enzyme glutamic-oxalacetic transaminase found in the serum. This enzyme can be detected in serum by a rapid and convenient procedure. An increase in the level of serum transaminase is typical of only a few pathological conditions all of which can readily be distinguished from myocardial infarction by other methods.

These include, in addition to myocardial infarction, several other conditions which bring about severe destruction of heart muscle, such as rheumatic carditis or myocarditis,⁴ or severe damage to the liver including metastatic lesions in the liver, or damage to skeletal muscle as by certain surgical procedures. All these conditions are usually readily distinguishable from myocardial infarction.

In order to determine the amount of transaminase in a specimen of serum, aspartic acid and alpha-ketoglutaric acid are added. The enzyme catalyzes the transfer of the amino group of aspartic acid to alpha-ketoglutaric acid to produce glutamic acid and oxalacetic acid. The amount of oxalacetic acid produced is then measured, using another enzyme system, malic dehydrogenase, which converts oxalacetic acid to malic acid in the presence of reduced diphosphopyridine nucleotide (DPNH). For each mole of oxalacetic acid reduced, a mole of DPNH is oxidized. Since DPNH has a strong absorption band at 340 millimicrons and this band disappears when the material is oxidized, the course of the reaction can be followed readily in a spectrophotometer by observing the decrease in absorption at 340 millimicrons.

The assay is performed by adding to 0.1 ml. of serum or plasma, 0.5 ml. of 0.2 molar aspartic acid solution adjusted to pH 7.5, 0.1 ml. of reduced diphosphopyridine nucleotide solution containing 2 mg. per ml., 0.1 ml. of solution of purified malic dehydrogenase containing 2,000 units per ml. and 0.1 molar phosphate buffer pH 7.5 to make a final volume of 2.8 ml. This mixture is allowed to stand at room temperature for ten minutes to consume endogenous substrate, after which 0.2 ml. of a 0.1

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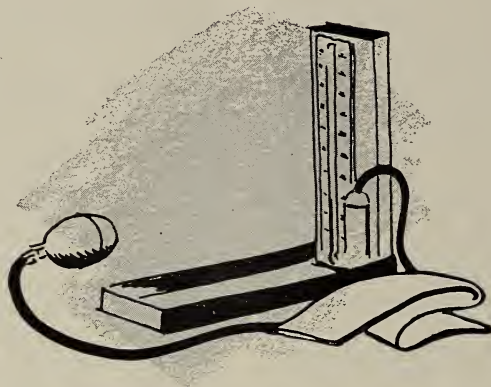
From the California Foundation for Biochemical Research, Los Angeles 63.

molar solution of alpha-ketoglutaric acid in buffer, final pH 7.5, is added and the mixture placed in a spectrophotometer. The absorption at 340 millimicrons is observed at intervals for several minutes. One unit of transaminase activity is defined as the activity in 1 ml. of the serum which causes an optical density decrease of 0.001 in one minute under these conditions. The transaminase activity of normal serum varies from 10 to 40 units per ml. In myocardial infarction the level rises to about 150 units per ml., although there is a wide range of values with some as high as several thousand units per ml.

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Scalene Node Biopsy

An Analysis of 42 Cases

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In 1949 Daniels⁵ reported the examination of scalene lymph nodes in the diagnosis of certain intrathoracic diseases. Immediately the Department of Thoracic Surgery at the Los Angeles County Harbor General Hospital began to apply this procedure to a group of patients with pulmonary disease presenting diagnostic problems. This report is intended to evaluate the usefulness of this special type of biopsy in a variety of intrathoracic conditions.

The basis of the scalene node or fat pad biopsy is that lymph nodes anterior to the scalenus anticus muscle are connected to the mediastinal nodes. Thus intrathoracic disease involving the mediastinal nodes may often be reflected in the scalene nodes. The same is true of systemic disease directly involving the mediastinal nodes. The simple scalene node biopsy, hence, is in a way, biopsy of the mediastinal nodes without the necessity of entering the thorax.

Data on 42 cases were available for the present study. It is important to emphasize that only two of the patients had enlarged lymph nodes on physical examination. All had abnormalities in x-ray films of the chest—a hilar mass in 20 cases, some mottling in eight, effusion in nine, calcification in two, and a nodular shadow in three. Ages ranged from 18 to 88 years. There were 32 males and 10 females. On admission, the chief complaint was related to the chest in only 50 per cent of the cases. The clinical impression of the senior resident staff was correct in 19, incorrect in 16, and deferred in seven cases. Twenty-one of the patients had bronchoscopic examination and in 12 cases abnormalities were noted. In two cases diagnosis was made on the basis of a bronchoscopic biopsy specimen. Cytologic studies of bronchial washings from the 21 patients were diagnostic in two more cases. Sputum examination was of no value even in the study of the patients who had tuberculosis. Only one patient with lobar pneumonia showed pneumococci on culture. Four cases were diagnosed by other means, such as pleural fluid study or bone marrow biopsy. Therefore, in 33 of the 42 cases included in this series, the diagnosis of the pulmonary lesion was entirely dependent on the scalene node biopsy.

From Los Angeles County Harbor General Hospital, Torrance.
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• Scalene node biopsy was done in 42 patients with previously undiagnosed intrathoracic lesions. A definite histologic diagnosis was obtained in 25 patients.

Scalene node biopsy is not only a valuable diagnostic procedure for intrathoracic lesions, but many times it may obviate the necessity of exploratory thoracotomy. If a diagnosis of carcinoma of lung is established by scalene node biopsy, the operability of the patient and the type of pulmonary resection should be carefully evaluated.

Right scalene node biopsy was done 21 times and a left 19, including two patients who had bilateral biopsies. In four cases the site was not stated. Selection of the side for biopsy was based on Rouvière's⁸ description of the lymphatic drainage of the human lung. If the lesion was on the right side, only right scalene biopsy was performed, because the drainage is via the right paratracheal chain. Similarly with lesions in the left side of the chest. Since lesions in the left lower lobe, however, may metastasize to the subcarinal nodes and then up the right paratracheal chain, a bilateral procedure was done in such cases. For lesions in the left upper lobe, only the left side was explored.

A definite histologic diagnosis was obtained in 25 of the 42 cases in which 44 scalene node biopsies were done. Results were as shown in Table 1. Results of scalene node biopsy reported by other investigators are shown in Table 2.

Complications following scalene node biopsy are infrequent. Hemorrhage occurred in one case in the series, due to injury to the jugular vein, but it was readily controlled.

TABLE 1.—Results of 44 Scalene Node Biopsies in 42 Patients with Undiagnosed Lesions in the Chest

	Diagnosis from Biopsy	Final Diagnosis, by Exploration, Autopsy, etc.
Carcinoma of the lung.....	9	13
Metastatic tumor to lung.....	8	14
Pulmonary tuberculosis	3	5
Lymphoma, generalized or localized..	3	3
Pneumonia	—	3
Anthraxis	1	1
Sarcoidosis	1	1
Undiagnosed	—	2

TABLE 2.—Results of Scalene Node Biopsy Reported by Various Investigators

Author	Number of Patients	Positive Biopsy (Per Cent)	Per Cent with Carcinoma of Lung
Shefts et al ⁹	187	35.8	6
Harken et al ⁶	142	31.7	68
Cuykendall ⁴	41	22	34
Carstensen et al ²	56	64	....
Yang	42	59.5	62

Particular emphasis should be placed upon the usefulness of scalene node biopsy in patients with bronchogenic carcinoma. In this disease the value of this biopsy is two-fold: (1) A diagnosis may often be obtained without thoracotomy; (2) in such cases, and also in those where the diagnosis has been made by other means, the procedure is of value in determining the prognosis. When a scalene node biopsy is positive for cancer, it is obvious that there has been considerable extension of the carcinoma; operability is then questionable.

The average of the five-year salvage rates reported by Overholt and Schmidt,⁷ Adams,¹ and Churchill³ is about 12 per cent when the mediastinal nodes are involved. It seems reasonable to question, first,

whether any five-year survival rate could be achieved when nodes outside the chest cavity are involved.

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Coccidioidomycosis

Treatment with Isonicotinic Acid Hydrazide

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ISONICOTINIC ACID HYDRAZIDE (INH) has been widely used in tuberculosis and also with some success in the treatment of nontuberculous diseases, such as actinomycosis⁹ and lupus erythematosus,³ and with equivocal results in sarcoidosis.^{4,6} It is the purpose of this communication to report the apparent success of such therapy in two advanced cases and one moderate case of coccidioidomycosis. Disseminated coccidioidomycosis is often fatal and since coccidioid granulomata are histologically typical granulomata with tubercle-like formations, indistinguishable from those seen in tuberculosis, it seemed logical to initiate a therapeutic trial with INH in established cases of coccidioidomycosis. Whether the patients recovered because of the use of the drug or in spite of it, as with other drugs that have been tried, may be questioned, for adequate controls are not possible in so limited a number of cases. It is known, however, that advanced or progressive coccidioidomycosis is very resistant to treatment and again it must be remembered that, as in many other diseases, many patients recover with symptomatic treatment.

In 1953 Tager¹³ reported on the use of INH in experimental coccidioid infection in mice and found it ineffective. In vitro experiments, however, demonstrated inhibition of *coccidioides* cultures when INH concentrations of 1,000 gamma per ml. were used, but it was ineffective in 100 gamma and 10 gamma per ml. concentrations. However, INH appeared to be effective in the cases herein reported, which gives rise to question whether the situation might not be somewhat analogous to that of sporotrichosis, in which iodides have been considered essentially specific therapy. The mechanism by which iodides are effective in sporotrichosis is not known and although they are curative in man, sporotricha thrive well on agar medium containing potassium iodide in 10 per cent concentration. Iodides do not prevent experimental sporotrichosis in rats, but infected rats can be cured by iodide therapy.¹⁰ Studies with INH in culture and animals may not have been extensive enough, in view of the clinical case results.

• Since coccidioid granulomas are histologically indistinguishable from tuberculous granulomas, a long course of isonicotinic acid hydrazide therapy was tried experimentally in three cases of coccidioidomycosis, with good results. In two cases the disease was far advanced and prognosis poor before INH therapy was begun. In one case the disease was mild and symptoms abated after a short course of small doses of INH. It recurred when INH therapy was discontinued, and again resolved when larger doses of INH were given over a longer period.

INH seemed to have an effect on appetite also, although the patients were taking B-complex vitamins both before and during INH treatment. The three patients ill with coccidioidomycosis averaged a weight gain of four and a half pounds a month during the period of INH therapy. Six well persons who were underweight and lacked appetite were given INH without other drugs, and they then had an increase in appetite and in weight.

Again, *Coccidioides immitis* has been reported by Feise, Chen and Sorenson⁵ as existent in two phases, the saprophytic and the parasitic. In the former the fungus appears as a mycelial mass of hyphae, occurring in nature and culture media, while in the parasitic phase the fungus has the appearance of an endosporium or spherule that occurs in animal tissues. This could account for differences in experimental results. Furthermore, different strains of *Coccidioides immitis* conceivably could show differences in response to INH and further laboratory studies will have to be conducted to elicit such information. Clinically, there will continue to be experimental difficulties too, because one cannot run a long control period in such patients and one is usually limited in the number of advanced cases available for long term study. Nevertheless, clinical repetition of cures merits a report if a drug such as INH has appeared logically effective, as in the present cases in which previous treatment served as a "control period."

There is a diversity of therapy and results in coccidioidomycosis. The following have been tried and failed in the treatment of advanced infections: Arsphenamine, antimony and potassium tartrate, gentian violet, thymol and related compounds, copper, iodides, sulfonamides, penicillin, streptomycin,

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aureomycin and chloramphenicol.² Improvements and possibly some cures have been reported with Mycostatin,¹² coccidioidin, prodigiosin² and 2-hydroxystilbamidine.¹¹ Recently, sodium caprylate, ethyl vanillate, stilbamidine, thiolutin and remocidin have been shown to have good in vitro antifungal activity against *Coccidioides immitis*.²

There are some further therapeutic considerations in the clinical use of INH. Administration of INH produces a propensity to bleed in about two weeks. This effect abates within 60 days, according to a report by Krasner⁷ in 1954. In the same year Biehl and Vilter¹ were able to prevent neuritis in patients who received large doses of INH by giving pyridoxine concurrently. Apparently there is metabolic competition between INH and menadione, pyridoxine, niacin and possibly other B-complex factors. Metabolically this suggests a possible approach to a study of the mechanism of activity. Meanwhile, it implies therapeutic supplement of these factors when treating patients with INH to avoid deficiency sequelae. Therefore, it was logical therapy to incorporate vitamin B-complex and vitamin K as supplemental therapy, as this was learned from the current literature on the treatment of coccidioidomycosis with INH. To offset possible sequelae during periods of physiological stress, of severe illness or of possibility of tissue depletion of vitamin, one of the brands of multiple vitamins was prescribed in the cases herein reported. On a prescription basis the following has therefore been devised so that the medicaments may be given as a single medicinal form useful in early or advanced coccidioidomycosis treatment and thus fulfill the known scientific clinical criteria for INH usage.

Rx

Acetylsalicylic acid powder	645 mg.
Isonicotinic acid hydrazide powder	100 mg.
Vitamin K powder (menadione)	2 mg.
B-complex powder	50 mg.

Make 360 capsules.

To be taken one capsule three times a day after meals.

The prescription devised is intended for four months' use. The prescription may be varied according to indications.

REPORTS OF CASES

CASE 1. A 22-year-old negro man, a resident of California, was first admitted to the hospital on January 14, 1953, for mild sore throat, fever and polyarticular pain. Upon physical examination the only abnormalities noted were inflamed throat and painful joints. Results of laboratory tests were within normal limits. The patient had good response to acetylsalicylic acid, 0.6 gm. daily in three doses, and was discharged February 2, 1953. On February 14, 1953, he was readmitted to the hospital with the same complaint. Results of examination of the blood

and of urinalysis were within normal limits but the blood sedimentation rate was 23 mm. in one hour. He was kept at bed rest and acetylsalicylic acid, 0.6 gm. every four hours, was given until the sedimentation rate returned to normal on February 26, 1953. He was then discharged. On June 29, 1953, he was readmitted to the hospital with complaint of precordial pain, anorexia and loss of weight. Moist, musical rales were heard throughout the left upper chest. The temperature ranged from 103° to 104° F. The blood sedimentation rate was 35 mm. in one hour. Leukocytes numbered 12,700 per cu. mm., 77 per cent polymorphonuclear cells.

An x-ray film of the chest showed areas of soft infiltration in the left upper lobe, representing possible tuberculosis of indeterminate activity. A cold agglutination test was positive at 1:128 dilution and the results of coccidioidin and tuberculosis skin tests were negative. Microscopic examination and cultures of sputum were carried out but no pathogenic organisms were observed until August 23, 1953, when many double-contoured cells resembling *Coccidioides immitis* were noted. Typical colonies of *Coccidioides immitis* grew on a culture. On September 23, 1953, an x-ray film of the chest showed pronounced increase in the density of the entire left pulmonary field. Before the diagnosis of coccidioidomycosis was made, the patient had been given antibiotic and antipyretic drugs, for the x-ray consultant had concurred with a diagnosis of atelectasis and pneumonitis but had suggested the possibility of lymphoblastoma, Friedlander's bacillus pneumonia, or Boeck's sarcoid. The patient continued to have fever, and repeated x-ray films showed progression of the pulmonary lesion. Several blood transfusions were given because of progressive anemia. The body weight, which was 137 pounds when the patient was first observed, was 134 pounds.

On November 13, 1953, administration of potassium iodide, saturated solution, 15 drops three times a day after meals, was begun. Fever continued and the patient showed no improvement. On November 27, 1953, administration of isonicotinic acid hydrazide (Niconyl®), 100 mg. three times a day, was begun. It was continued four months. The patient was afebrile within 14 days after INH therapy was started, except for an occasional 99° F. or 100° F. He was also receiving multi-vitamins (Diketan), one tablet three times a day. X-ray films of the chest began to show gradual clearing, the patient had increased appetite, a gradual gain in weight, and no fever. The sputum was negative for *Coccidioides immitis* on March 22, 1954, and final x-ray films of the chest were essentially normal.

This was a most interesting case, for it encompassed the development of pulmonary coccidioidomycosis from the earliest stage, difficult to diagnose, to an advanced stage; from mild illness to severe illness with prognosis very poor, and then favorable response only to therapy with INH (Niconyl). The patient was given such supportive and symptomatic therapy as was indicated throughout the long course

of the disease, such as high-caloric diet, multiple vitamins, antipyretics, fluids, transfusions of blood and complete bed rest. He was discharged, asymptomatic and well on April 6, 1954. The body weight then was 161 pounds. Observed from time to time at another clinic in Los Angeles, the patient had remained well for two years at the time of last report.

CASE 2. A 23-year-old negro man, a California inhabitant, was given an entrance examination January 21, 1953, upon enrollment at the Chino Guidance Center, and all medical questions were answered in the negative. The body weight was 137 pounds, the height 67 inches. Third degree pes planus and moderate thoracic kyphosis were noted. A serologic test was negative for syphilis. In 1946 the patient had had tetanus, typhoid, pertussis and influenza immunizations. He was transferred to California Institution for Men on March 16, 1953, and after transferral reported to the outpatient clinic six times with complaint of pains in the right foot, leg and thigh. Conservative measures with physiotherapy and analgesic drugs were without results and on July 16, 1953, he was admitted to the hospital for further study. At this time he gave a history of having had sore throat and "flu-like" symptoms three weeks prior to the initial examination at Chino. The chief complaints upon admittance to hospital were constant aching in the right hip and leg, a decrease of 15 pounds in body weight, moderate polydipsia and mild dyspnea.

The temperature fluctuated from 99° F. to 102° F. during the period in hospital, until just before discharge on September 5, 1953.

The abdomen was flat but tender in the lower abdominal quadrants. Upon rectal examinations, the lower quadrant tenderness was observed to be more pronounced on the right, but no masses were felt. Motion in the right leg was limited by pain and tightness in the adductor muscles and there was noticeable atrophy of muscles of the right thigh. The patient had a peculiar gait, with the right leg thrown upward and forward, suggesting a slight foot drop. The power of abduction and adduction in the right leg was poor. The knee jerk and ankle clonus of both right and left legs were exaggerated. The result of a coccidioidin skin test was negative.

The blood sedimentation rate was 40 mm. in one hour. The hemoglobin value was 59 per cent. Erythrocytes numbered 2.96 million per cu. mm., and leukocytes 6,800 per cu. mm. with 40 per cent polymorphonuclear cells, 8 per cent monocytes, 2 per cent stab cells, and anisocytosis and poikilocytosis. The blood type was B, Rh positive. The result of a glucose tolerance test was abnormal but not typically diabetic. Urinalysis was within normal limits and Bence-Jones protein was absent. The results of gastric analysis were essentially normal. No abnormality was noted in the feces. Agglutination tests were negative for typhoid, tularemia and Brucellosis. No abnormalities in the chest, pelvis or spine were observed in repeated roentgenographic

examinations. The patient was given two blood transfusions, crude liver injections and acetylsalicylic acid for anemia and an infectious process of undetermined cause. By September 5, 1953, he had improved sufficiently to be discharged. Two months later he was readmitted because of two large separate fluctuant masses on the lateral aspect of the right hip. Ten centimeters of fluid material was aspirated from the masses under sterile conditions, and two incisions were made into each mass at the most dependent points. From 10 to 12 ounces of odorless, yellow-green, freely running material was expressed from each mass and a seton-type drain introduced. Upon examination of the aspirated contents, double contour bodies with endospores characteristic of *Coccidioides immitis* were observed. *Coccidioides immitis* grew on cultures. The disease was considered disseminated coccidioidomycosis, the disseminative process confined evidently to two granulomas which developed into abscesses. Therapy for the next four months consisted of changes of dressings, administration of 0.6 gm. of acetylsalicylic acid three times a day, INH (Niconyl) 100 mg. three times a day, a multiple vitamin preparation (Hexavitamins, two capsules daily) high caloric diet and bed rest. By February 4, 1954, there was little drainage, granulation had begun in the abscessed areas, appetite was good and the body weight had begun to increase. On March 30, 1954, the patient was discharged from the hospital with instructions to return for changes of dressings. No residual effects from the severe and prolonged illness were noted. The patient remained well.

CASE 3. The patient, a 27-year-old negro man, a California inhabitant, was given a routine medical examination at the Chino Guidance Center on May 11, 1955. The only abnormalities observed were an umbilical hernia and a questionable miniature x-ray film of the chest. The patient was 69 inches tall and weighed 142 pounds. An x-ray film of the chest on July 25, 1955, showed an area of increased density in the lower right lobe.

On August 29, 1955, the patient was hospitalized because after running 100 yards he felt dizzy and coughed up blood. During the preceding month he had had a cough which was present only on arising, and he expectorated thick, yellow mucus.

Upon physical examination the chest was observed to be symmetrical and without dullness to percussion, but sibilant and sonorous rales were heard on both inspiration and expiration. The preliminary diagnosis was acute, mild, bronchial asthma, probably of infectious nature. An x-ray film on August 29, 1955, showed localized pneumonitis in the lower right lobe. A culture of sputum September 2, 1955, on solid media showed a rapidly growing structure, white in color, with abundant delicate mycelia. Upon microscopic examination of a wedge of the colony, hyphae with dark-staining internal bodies, considered arthrospores, were seen. From this and a subsequent culture, coccidioidomycosis

was diagnosed. The patient was afebrile. Leukocytes numbered 6,350 per cu. mm. and the blood sedimentation rate was 17 mm. in one hour. The patient was not ill and a trial of minimal therapy was decided upon since the illness was mild and had been diagnosed early. For three weeks only INH (Nydrazid), 50 mg. three times a day, was given. By September 20, 1955, the blood sedimentation rate was 12 mm. in one hour, the density observed in an x-ray film of the chest decreased and, as the patient was asymptomatic and not raising any yellow sputum, he was discharged and thereafter was observed in the outpatient clinic periodically for the next two months. By November 14, 1955, he was expectorating yellow sputum again and he was rehospitalized for further study although he was not ill. The sputum was positive for *Coccidioides immitis* and an x-ray film of the chest showed increasing soft tissue density in the right lower lobe as before. Results of precipitin, complement fixation, and skin tests were negative. Sibilant and sonorous rales were heard in the entire chest on numerous occasions. The patient was unaware of any asthmatic wheezing. The sedimentation rate was 14 mm. in one hour. Leukocytes numbered 9,780 per cu. mm.—63 per cent polymorphonuclear cells and 37 per cent lymphocytes. The hemoglobin content was 14.9 gm. per 100 cc. of blood, and erythrocytes numbered 5,000,000 per cu. mm. Nydrazid was given, 100 mg. three times a day. The patient also received B-complex, one tablet three times a day orally, and vitamin K, 5 mg. daily, intramuscularly. A high caloric diet was prescribed and the patient was kept in bed. There was gradual resolution of the density in the right lower lobe of the lung. By the end of the third week, the patient was expectorating only a little yellowish sputum, none on most days. Sputum specimens were negative for *Coccidioides immitis* on January 23, 1956, and the lungs were clear. The body weight was 152 pounds. The patient was discharged but therapy was continued for four months.

In the foregoing rather mild case of coccidioidomycosis, the recurrence of symptoms after they had abated during a period when relatively small doses of INH were given for a short time and the subsequent resolution of the disease when the dosage was increased, indicated that whether the lesion was small, extensive or disseminated, optimal therapy was 100 mg. of INH, three times a day, with B-complex and vitamin K as a supplement, given for at least a four-month period. Somewhat analogous to tuberculosis treatment, INH treatment of coccidioidomycosis requires long-term administration.

In all three of the cases here reported, the most striking feature was the return of appetite or increase in appetite associated with INH therapy. There was an average weight gain of four and one-half pounds per patient per month.

A short-term pharmacological appraisal was done to further evaluate the clinical observation of INH effect on appetite. Six persons without disease but known to be constantly underweight and lacking appetite, were given 100 mg. of INH three times a day after meals as in the reported cases of coccidioidomycosis. They previously had had high caloric diet plus supplemental vitamin therapy (thiamine or B-complex) without increase in weight or appetite. The subjects did not know the nature of the therapy or of its possible effects. An average weight gain of two pounds per patient per month occurred over a three-month period. Without prompting, the subjects readily mentioned increased appetite.

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ADDENDUM

Since this communication was written, three additional patients with early diagnosed pulmonary coccidioidomycosis of variable degree have been given INH combination therapy as discussed in the text and are responding and recovering satisfactorily.

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Normal Psychological Changes in Adolescence

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ADOLESCENCE is a final, lively stage in a child's growth to adulthood. The adolescent has a long history with his parents, school, his peers, and society, and their demands, values and mores. The sex drive, emancipation from parental authority, and the aggressive drive to achieve and dominate are the outstanding challenges which confront an adolescent, and the expression of these drives is conditioned by his previously established relationships and reactions. A previously well-knit personality is loosened up, as it were, under the impact of the profound biological changes and drives clamoring for satisfaction, and the prohibitions opposing the expression of such drives. Modes of behavior, previously satisfactory, often are not adequate to cope with the changes, and the resulting behavior may frighten teachers and parents.

Physicians have to keep in mind that the adolescents' turbulence, confusion and contradictions can often make them appear very sick and yet in most instances the behavior, if understood for what it is, may be quite normal. Adolescent disturbances can assume protean forms and they can be of devastating severity. Even psychiatrists whose work is largely with elementary and high school aged children often cannot easily distinguish between some types of adolescent turmoil and, for example, schizophrenia; and it is especially imperative that physicians avoid serious diagnostic mistakes in this highly vulnerable period. The capacity for change is vast; the clinical picture may change kaleidoscopically in a short time.

Physicians must also be cautious not to put too much reliance on projective tests like the Rorschach. These tests are valuable aids and they may reveal an impaired capacity to cope with internal stresses and reality demands as well as responses similar to those in schizophrenia. Even so, the individual may still emerge into integrated, responsible adulthood. In most cases the confusions, turbulences and contradictions pass. The physician who would be helpful to the educator and the parent must be cautious of his diagnosis, and understanding of the biological, psychological and social strains our society imposes on boys and girls whose immaturity is protected by the conventions of our culture. The physician must attempt to understand the meaning of the changes

- It behooves physicians to be aware that adolescents are different people, that they have a vast capacity for change, that they often exhibit the sickest kind of behavior, which may be very frightening to us and to them.

Physicians have to be able to wait and not become panicked by the turbulences, confusions, and contradictions that mark the adolescent's behavior; to keep in mind at all times that much of what is going on is relatively normal behavior in the drive toward maturation and adulthood; that the adolescent has to cope with his sexual drive which is continually frustrated, that he has to cope with the problems of emancipation from parental authority, that he has to cope with an aggressive drive to achieve and to dominate.

Parents, too, have to be understanding and ready to render unselfish support, for they continue to be the source of strength and security, and even the source of healthy restrictions. Adults must be aware that the adolescent struggles with his conscience and its dictates, and we should look upon cliques, groups and clubs as a healthy assistance in the preservation of standards, ethics, and mores.

of the adolescent period. Then he must not permit his understanding and clinical patience to be clouded by the pressures of a distraught parent or apprehensive educator, or by any other pressures.

Adolescence is a physical event. At the end of the adolescent period the body is mature, however childish the person living in it. All develop at their own individual rates, but the sequence of bodily growth is more or less the same for all adolescents everywhere in the world. However, the reactions toward the basic changes—that is, menstruation, body hair—are not all alike.

The society in which the adolescent lives has much to do with his adolescent change. Even some of the differences between adolescent boys and girls are due to the different treatment and attitudes toward them. In the primitive cultures, early responsibility and status are given to youths, whose puberty is appropriately and ceremoniously marked. Interestingly, adolescence in such cultures is usually a mild period. In our society, with its complexity, demands and codes, we postpone recognition of adolescents as adults, hinder their independence, frustrate a biologically sexually mature organism. One has only to read the newspapers to confirm that teen-agers are regarded as a special breed, as irresponsible,

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and with suspicion until proven innocent. Their bad deeds are played up and reflect on the whole age group; their good deeds are largely ignored. This helps make the period one of strain.

The great majority of the so-called problems of adolescence have to do with normal reactions and phases through which the adolescent passes in his growth to adulthood. The adolescents are trying to solve problems that have been present from their earliest years. From the earliest years they learn to withstand frustration, to do the right thing, to accept limits and controls. The methods previously learned are tested again and again in puberty. Earlier unsolved problems are re-presented for re-solution.

The adolescent feels driven to be independent. He has to make his own decisions, choose his own friends, determine his own future. There is a real, powerful drive for emancipation and independence which comes not only from the internal pressures but also from pressures of peers, society and parents. The prominent feature of the adolescent's push for emancipation is the devaluation and belittlement of his parents. It is a necessary, constant part of development toward independence and maturity, a normal phase. All areas in which parents are concerned in bringing up children are involved—ideals, actions, school plans, habits, thinking. Difficult for the parents, but necessary for the youth.

The belittlement and devaluation also may be part of a desire to repudiate the whole growing up process. Sloppiness may be a repudiation of painstaking training in cleanliness, but since girls do not like messiness, the lad shows his "hate" of girls in this way. Girls, too, may repudiate their feminine role by acting as tomboys, and, in extreme cases, may diet or refuse to eat to avoid developing a female shape.

If there are no issues, adolescents will make them to assert their independence and cause parental comment. "Back talk" may be merely holding their own. "Fresh talk" is often fresh, but it may present a fresh point of view. It is a jolt to adults to have a teen-ager question their wisdom—but it may be salutary. Yet, an adolescent really fears to give up his parents or to make wrong decisions, even if concealed by vast amounts of bluster and bragging.

With the physical changes, the adolescent soon becomes a biologically mature organism capable of sexual relations and producing children. Although physically mature, in most instances he is not considered psychologically or socially mature enough in our society to marry and start a family. Sexual frustration is imposed upon the biologically mature individual with a powerfully reinforced sexual drive. He cannot, sometimes even in fantasy, indulge his longing for sexual experimentation without in-

curing feelings of guilt and anxiety. The powerful reinforcement of the sexual drive, its seeking for satisfaction like other basic drives, and its achievement of heterosexuality are fundamental.

Attachments to parents and parents of the opposite sex must be freed so that the mature individual becomes free to choose and love his or her own mate. In the effort to free himself from the love objects of childhood, many new attachments take place. There are attachments to members of his own group and to an older person as a guide and leader. There are many episodes of passionately falling in love and being exclusively with the loved one—but briefly, and the relations are abruptly broken off. Striking faithlessness, changeableness and abruptness are characteristics of these relationships. The adolescent's aim in these relationships is not so much to possess the male or female in mature, adult ways, but to assimilate himself as much as possible to the person at the moment important to him. This has an important psychological function because the rupture of former relationships is disturbing. The youth prevents withdrawing into himself and concentrating totally upon himself by the brief love relationships which make contact with those outside of himself.

More specifically, the sexuality of early adolescence reactivates the family triangle. In early childhood there is a normal phase when the child is strongly attached to the parent of the opposite sex and jealous of the parent of the same sex. Once again, the boy's mother looms important, and he makes every effort to deny her appeal. Clinically, we see this in his avoiding an affectionate relationship with his mother. He now refuses any of the previously accepted physical manifestations of affection. His mother must avoid all physical contact with him. She cannot kiss or hug him. Verbal expressions of affection are brushed aside and praise means treating him like a baby. He has to reassure himself that he is capable of independent action, free from the dictates of his mother. Suggestions are responded to with irritation. Feelings of inadequacy are exaggerated in the boy, and he defends himself by avoiding imitation of his father and particularly by tearing down the virtues of his parent. He belittles his father in thought, in action, and in words, regardless of the father's station in life or profession, thus establishing his own self-respect. Yet, there are alternate phases when he seeks his mother's responses flirtatiously and provocatively and accepts his father as an oracle and treats him as if he were the exceptional man or the man of the year.

The adolescent girl faces a more difficult adjustment. Her clearest definition of femininity is that

with which her mother has acquainted her, and which she has accepted as a model for herself. She vacillates between contempt and idealization for her mother and father, in various combinations and singly or together. It must be borne in mind, too, that our culture does not provide a milieu that is conducive to the fulfillment of the normal biological urges of women. As one authority remarked, too often a woman finds that biological fertility results in sterility in other aspects of her life. If the mother has not found rich and multiple gratification in her own femininity, identification with the mother inevitably creates a struggle for the maturing girl.

Mention should be made of the struggle with conscience that goes on during this period. Conscience results from the incorporation and internalizing of parental standards, dictates, and values. The youth rebels against his conscience, flaunts his new freedom, verbalizes his contempt for its demands, and acts out token proof that he is free of it. In seeking a symbol of his conscience against which to strike, he most frequently chooses his parents, who were the determinants of the original pattern for his conscience. The rebellion is frightening to him too, for the new, surging impulses are not readily checked. So, at one time he may be frighteningly free of inhibitions, and at other times, frightened, may deprive himself of all normal spontaneity by unrealistic, self-imposed prohibitions.

It is during this period of rebellion against conscience and standards that the influence of the peer group becomes apparent. The group and the youth's association with it are largely positive and constructive for his healthy development. Many parental standards are valued by the group. The average social group, wishing to be accepted in the social structure, does not give up the more important values that the parents imposed earlier upon each individual. The peer group gives him support, answers his questions. He can discuss his mixed feelings and find comfort in the similar suffering of others with whom he feels equal. The group softens the rebellion against conscience. The group works out concepts of morality, ethics, and social customs. If their past experiences have been generally satisfactory, the resulting group attitudes will not be strikingly different from parental standards, yet will be accepted readily by the youth. The group serves as a relative island of security in a confusing world.

Confusions abound in the adolescent period. Confusion, of itself, is not so harmful. It is unavoidable. There are many confusions for parents and adolescents. Take dating. If he does not date, his parents are concerned, and he may be pressured and teased. Basically, they indicate to the lad that he can be and should be more tolerant of his natural impulses

toward the opposite sex. He finally dates. Parents become alarmed and question, "Why are you staying out so late?" "Why aren't you studying?" "Do you know the risks involved with girls?" Basically, now they indicate to the youth the dangers of giving in to his own impulses.

The lad is reminded by his parents that he is growing up, urged to assume responsibility, to think for himself, to be less dependent on them for guidance. What happens when he finally attains more independence? He is reminded they are his parents, that he is too young to know what is best for him, that they have a right to control him until he is of age. Independence does not mean the adolescent should take more initiative in doing what his parents wish him to do. Nor are parents' wishes always clear. They expect him to be grown up in the sense of possessing all the virtues parents value and not to have any of the vices that adults tolerate in one another.

Parents are often frightened by their child's maturing. Most hope their child will be a better and happier adult. They sense his confusion and are frightened by it. They sense the effect of his biological urges and that he does not have the defenses to cope with them. Looking back upon their own adolescence, they often feel they were saved by some miracle but fear their son may not be. Many consciously want their child to grow up and unconsciously hinder this. They may not wish to face the vacuum when the child is no longer dependent upon them, or may be jealous of his entering adulthood while theirs is relatively declining. Or they may fear competition from their adolescent, or fear his failure, or are so tied up with their child they cannot give him or her up.

Confusion is heightened by the fact that in our culture one has the right to develop as an individual so long as other individuals are not jeopardized. The social confusion makes the adolescent seek answers outside himself in his family group and outside world. The rules of living he gets are not without contradiction. There are no rigid prescriptions or guides. Adolescent behavior is unpredictable because it is determined by the confusion in him. Unlike the primitives, he is not protected by rituals and laws which confine and define "growing up." He is told to and is expected to "grow up." He is not told how to grow up.

Confusion is increased by half-truths learned during childhood, whether sexual, ethical or moral. Concepts of democracy, of equality between the sexes, of sexual freedom and of freedom to choose social groups are tested by reality, and the ideal is found not practicable or possible or feasible.

Variations in growth and development add to the

confusions. We tend to rely heavily on statistical norms and criteria, so that a child may be considered maladjusted because he matures early and behaves differently. The child who matures late may be in a setting appropriate for the more mature, and he, too, would be considered maladjusted. Adolescence is not a chronological period nor does identical age mean identical maturation. Variations in growth create problems because our cultural program is standardized and for the adolescent, relationship to his own chronological group may be difficult. Adults may frown on him, he may not get support from his peers, and an unpleasant, troubling vacuum may result.

Contradictions mark the behavior of the adolescent. They have a real meaning and result from an attempt to find clean-cut answers to internal stress and drives and to problems the real world imposes upon him. The biological changes evident in the bodily changes are important in stimulating this behavior. Pressure toward maturation increases. Aggressive energy with which to strike out more effectively against controlling forces that strive to prevent gratification of impulses also increases. The sexual drive which is maturing is clamoring more urgently for sexual fulfillment. The painfully acquired psychological balance is shaken by the impact of these changes.

To illustrate: The adolescent struggles for independence, protests that he does not want to be told what to do, and at the same time he is not quite able to handle his independent activities as adequately as he did in the immediate past. His sometimes impulsive behavior, his confusions about what he wants, his goals, disturb him and not just adults. He is likely to want—at the same time that he protests—advice about clothes, hours to keep, food to eat, ethical and moral formulas to embrace. The contradictions are based on the normal struggle between independence and dependence.

He may be so absorbed with girls that he neglects all other work and duties. Then, suddenly, all interest in girls seems to stop; they do not exist or they are no good. All activities are with boys, whether just "bull sessions" or loafing or athletics. Parents may relax when Ken seems very devoted to a desirable girl. But the devotion is short-lived. Suddenly, Ken loses all interest in this girl and seems very devoted to a girl who is undesirable according to family standards. The desirable girl is cast off as "too nice." Yet, when he abandons the "not nice" girl it will be because she is "not nice."

His personal relationships are a study indeed. Any similarity between ideals expressed and behavior is purely coincidental. He may hate or love with ferocious intensity, often far out of proportion to any

observable rational cause for either. Teasing about his haircut might set off a blast, yet he might readily forgive the lad who dates his girl friend. He may accept severe, unjustified reprimands and yet rage if asked to turn in cleaner homework.

No matter what the behavior of adolescents, parents must realize that the parents are a source of protection and security. And, as the youth becomes more mature, he turns less and less to parents or substitutes as he masters more and more of his problems.

Physicians all too often are confronted with somatic abnormalities that can conceal psychological phenomena. Some of the common clinical pictures of this kind are:

Adolescence as a Physical Event. The beginning and end of adolescence cannot easily be marked off, but the age range is from nine to seventeen years. Usually, however, it begins at 13 or 14 years of age in boys and about a year earlier in girls. Growth is different for every boy and girl. Pronounced changes occur in the internal make-up, and with the body changes the adolescent has a new physical self. Sexual maturity and the appearance of the physical changes that make the girl as a woman, and the boy as a man, change their status in their own eyes and in the eyes of others. There are changes in body proportions, widening of hips and growth of breasts of the girl, growth of pubic hair, hair in armpits, fuzzy hair on face and body, lowering of voice of the boy, the increased growth of the genital organs, and, of course, the maturing of the sex glands which in the girls is marked by menstruation and in the boy, by the presence of sperm. The age menstruation begins varies widely but most girls begin at about 13 years of age and it is a rare girl who has not menstruated by the time she is 16. Late menstruation need not be abnormal. Nor does menstruation necessarily mean the girl is sexually mature, for that is measured by the presence of ovulation. Eggs are not usually produced in the first year of menstruation, and that is why pregnancy is rare at that period.

All the changes can be quite bewildering. The many parts of the body do not develop at the same pace. The legs grow slowly in early childhood and very fast in adolescence. The organs have their own timing, and all this makes it hard to say how old a child is, physically. Girls and boys have different timing in their physical growth. The rate increases sharply until 18 to 20 years in girls and 20 to 22 in boys. From birth on, girls are ahead of boys in development—1 to 3 years ahead at age 12. It is very confusing for a girl—and her parents—to suddenly find that she is taller than boys in her class. Between ages 11 and 14, girls may become taller than boys for the only time in their lives. By age 15, boys have

overtaken them. The twelfth year for girls and the fourteenth year for boys are the years where the greatest gain in height is made too. Even in weight, girls outweigh boys for a time, from 12 to 15 years. Part of the weight gain comes from muscle growth and boys double their strength between 12 and 16 years. Sweat glands (and those supplying oil to the skin and hair) become more active. Incidentally, children tall between 6 and 10 years of age are usually tall at maturity.

Parents' attitudes about physical health are important. The examples they set in their own habits of caring for themselves and thinking about their health influence their children. Healthy attitudes and habits in parents about health are likely to be passed on to their children. On the other hand, parents who worry too much about their child's health may make illness a pleasant way to dodge unpleasant or uncomfortable situations like school, examinations, or formal social events. All too often people employ trumped-up methods to escape difficulties, and illness can be one way of escape and refuge. Young people should be taught to think of themselves as healthy, and one ought not to encourage in them that the trouble—whatever it may be—is physical. "What you need is a tonic" (or vitamins, or a cathartic, or to stay in bed), is all too often heard. This does not mean that one does not take care of physical ailments when suspected to be present, but one should avoid blaming all troubles on "It's probably your health."

Parents who worry too much about their boys participating in sports, about broken bones, strained backs, damaged hearts, make it very difficult for boys. There are a lot of false notions about sports damaging the heart of the adolescent. Actually, if a teen-ager is thoroughly examined physically and found to be in good health, most sports are safe for him and need cause no worry about heart strain. Thorough physical examination is emphasized because so many boys have been made psychological cripples and so many parents nervous wrecks because "a heart murmur" was diagnosed. Some heart murmurs are completely unimportant, and if that is the situation in a given case an expert will so inform the parents and will tell them also that the child's activities need not be limited. If there is any heart impairment, the physician should decide how much protection the child may need. Murmurs scare parents and children, and it is important that the facts be thoroughly known by the parents from experts—not from neighbors or "sidewalk professors." To overprotect is as harmful as avoiding all care.

Overweight Adolescent. The really fat adolescent is usually very self-conscious about it. The key lies

in the discovery of why a boy or girl has to fall back on eating as a solution to problems and a way of getting satisfaction. His hunger may be for being loved and admired, for feeling successful and happy. Many fat children are simply going through a stage of their development that does not last long—but parents need the physician's support to keep them from being anxious and passing on their worry to the child.

Sleep. The adolescent's sleep is important and he should have a chance for all the rest and sleep he will take. It is exasperating to parents to find their teen-agers full of energy for the things they want to do and, oh, so tired when asked to do something they really do not want to do. It usually has to do with the fact that adolescents have spurts of energy and then periods of flopping about. They are likely to do what they do so hard that they really have periods of exhaustion, and the things they like to do, they will do hard. Fatigue is forgotten when something exciting is going on, and only really felt later. This certainly does not mean that reasonable, required family duties are thrown overboard.

Acne. Acne is a troublesome condition in adolescence, coming at a time when boys and girls want to look attractive and are anxious about their looks. Many a youth avoids dating or group activities because he or she is miserably self-conscious about the pimples on face or neck. Sometimes they feel the acne is punishment for sexual practices like masturbation or indulgences like necking or petting. Of course, this is absolutely untrue. Inflamed pimples and blackheads come about because of the clogging of the oil ducts that carry oil to the skin. The treatment of acne certainly should be guided by a physician, who can discourage the various home remedies and prevent the harm often resulting. He can explain just what acne is, and his reassurance will guide the parents and the youth.

The "Hypochondriac." Parents often become impatient with a barrage of complaints from their teen-ager about this or that ache or ailment and, in exasperation, call him (or her) a "hypochondriac." While it is true that at times, when the youth's diet has not been proper, there may be a mild sort of malnutrition behind "not feeling well," most instances are not due to any illness. However, the physical discomforts are there. We have all had the experience of having some physical symptom when we were upset and anxious.

In some adolescents, the discomforts are really the same that have always been present except that the youth reacts to them at this time with greater sensitivity than in the past. During early childhood, one becomes familiar with and learns to ignore many

physical sensations to which one has responded earlier in infancy. During adolescence the keen awareness of body sensation returns.

At times, the "hypochondriac" may really be showing anxiousness about the physical changes occurring in him. For example, many girls complain about abdominal pain a few months before the onset of menstruation. They may be cranky, cross and irritable. Why the pain is present is not clear, but they are concerned and complain and fuss about it. Frank discussion about menstruation does not help relieve their anxiety. Another example: Some boys have a temporary breast development which makes them afraid they are going to be effeminate, and they show their worry in terms of physical symptoms. Many adolescents are anxious and uneasy about the various physiological and psychological adjustments being made, and this may be expressed in physical symptoms which certainly are easier to understand—and face—than the inner uneasiness.

The Awkward Youth. This is a myth. We have only to remember the young athletic champions to doubt that awkwardness is a necessary part of adolescence. Boys and girls do not fall over their own feet because they are growing up too fast. When they are doing something they are not self-conscious about there is no trouble about coordination or muscles working together. The awkwardness one may see is not due to anything physical but rather a social awkwardness, an awareness of the new self and being quite self-conscious about it.

Self-consciousness about the body and its changes may cause slouching or stooping. A girl may be ashamed of her height, or her pride in her breast development may be interfered with by mixed-up feelings about sex, and she may try to hide in poor

posture. Some boys too, worried about chest development they may consider feminine, will walk stooped and hunched over.

"Late Adolescence." It is the rare boy who does not mature physically even though late. It is not pleasant for a boy to be the smallest one in the class or not ready to do what others of his age do. Parents sometimes become very concerned and believe that hormones should be given to speed up the maturing of the lad, that his genitals should be larger or that he should be taller and more manly looking. Boys, too, become very concerned about the slow maturing or the size of their sex organs. Treatment with hormonal preparations is usually unnecessary and even harmful and mostly caters to parents' anxiety. The end result in most lads is the same without such treatment. On the other hand, there are special cases where use of hormonal injections might be advisable, but they are special cases and the decision should always be up to the physician, who will not be pushed beyond his better judgment by parents' concern.

There are no hormone preparations to reduce the height of a child and it does become a problem—especially for girls—to tower over others in the class. Sally was almost six feet tall when she was ten years old and felt very conspicuous, to the point where until her late teens she avoided walking through a group because she was sure they were talking about her. Girls who tower over boys do feel very conspicuous and complain bitterly about the real difficulty of dating. The attitudes parents have about their children, tall or small, have a lot to do with whether the children carry throughout life problems about their height.

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Workmen's Compensation

Emphasis on Rehabilitation

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AT ITS MEETING in Boston last November, the House of Delegates of the American Medical Association adopted a report entitled "Medical Relations in Workmen's Compensation" which was prepared at its request by the Council on Industrial Health and approved by the Board of Trustees. The report pointed out the need for a critical appraisal of medicine's past record of performance in this important sphere of medical service and provided a guide for the evaluation and implementation of a progressive workmen's compensation program by the medical profession. Some of the highlights of this report follow:

Historically, workmen's compensation laws were adopted to meet certain needs of employees and their survivors resulting from work-connected injury or death and to remedy inadequacies stemming from common law and employers' liability statutes. The provision of cash payments to replace a portion of lost wages was of primary concern. Little or no consideration was given to the provision of medical care. Ever since the first law was enacted in 1911, the major emphasis has been on monetary satisfaction of liability with insufficient attention to rehabilitation of the occupationally disabled.

Although substantial progress has been made in the extension and improvement of medical care and other aspects of the rehabilitation process, it is a matter of great and growing concern that a considerable gap exists between potential services to the occupationally disabled and what is actually provided.

Many physicians have been deterred from active participation in workmen's compensation affairs. They are largely unaware of the significance of medical and economic policies under these laws and the undesirable and often harmful effects of existing systems. Whatever the causes, this attitude has been unwise because not only workmen's compensation laws but other similar laws in related fields of social security have been formulated largely without medical consultation or any clear identification of medi-

• Since the first law was enacted in 1911 major emphasis has been placed on monetary satisfaction of liability with insufficient attention to rehabilitation of the occupationally disabled.

An effective workmen's compensation program must have three basic goals: (1) Rehabilitation of the occupationally disabled; (2) assured, prompt, and adequate indemnity for the occupationally disabled or their survivors; and (3) minimal costs to employers and society commensurate with the first two goals. It is suggested that the medical societies of each state provide a broadly representative committee to advise the administrative agency on medical policies and practices. This committee would prepare registers of all physicians in each locality who are willing and qualified to accept calls for service to injured employees, would mediate complaints originating with the employee, the employer, the insurance carrier or the administrative agency, and would cooperate with the administrative agency in educational programs for all concerned.

It is the physician's responsibility to help the administrative agency in shifting the emphasis from indemnity to rehabilitation. The disabled employee is entitled to all services available to restore him to an earning capacity.

cine's primary interest. The predominance which economic considerations have come to occupy in both professional and administrative aspects of workmen's compensation is a natural consequence. These same considerations have led to a concentration of professional services and responsibility in a few and not always the best hands.

An effective workmen's compensation program must have three basic goals:

1. Rehabilitation of the occupationally disabled;
2. Assured, prompt, and adequate indemnity for the occupationally disabled or their survivors; and
3. Minimal costs to employers and society commensurate with the first two goals.

The modern concept of rehabilitation implies the effective use of all disciplines and skills dedicated to the conquest of disability. Workable rehabilitation programs require specific statutory provision; planned and improved cooperation from the medical profession; and intelligent, forceful administrative supervision.

Chairman, Council on Industrial Health, American Medical Association.

Guest Speaker's Address: Presented before a Joint Meeting of the Sections on Industrial Medicine and Surgery, and Orthopedics, at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

Medical Implementation of Proper Rehabilitation

To implement a proper rehabilitation program, the medical profession should seek adoption of statutory provisions which recognize that:

1. Rehabilitation of the occupationally disabled is the intent and responsibility of the compensation system and the legal right of the employee.

2. The disabled employee is entitled to all services, appliances and supplies required by the nature of his disability or the process of his recovery and that will promote his restoration to or his continuance in employment. Services, appliances and supplies are spelled out in some detail in the report adopted by the A.M.A. and are to be paid for by the employer under the supervision of competent professionals responsible to the administrative agency. In the absence of stipulated agreements, professional fees should approximate those that would be charged the employee as a private patient for similar services.

3. The disabled employee has the right to accept physicians' services provided by the employer, or to select another physician from a register of all other physicians in the community willing and qualified to perform the essential services. This aspect of workmen's compensation was further emphasized by a resolution passed by the House of Delegates last November recommending "that the appropriate official medical organizations in each workmen's compensation jurisdiction examine and, where necessary, seek adoption of statutory provisions to the end that all patients subject to workmen's compensation laws have the right to accept physicians' services provided by employers or to select another attending physician from a register of all other physicians in the community willing and qualified to perform the essential services."

Suggested Responsibilities of the Medical Profession

Although the administrative agency has the ultimate responsibility by law, a successful medical program depends on improved and planned cooperation from the medical profession. The report suggests that the medical profession can best fulfill its responsibilities by providing a broadly representative committee to advise the administrative agency on medical policies and practices. Among the activities of this committee should be:

1. The preparation at suitable intervals of registers by communities of all physicians in the state who are willing and qualified to accept calls for services to injured employees. Regulations governing enrollment on these registers should be established by the administrative agency after consultation with the advisory medical committee.

2. The mediation of complaints regarding: Neglect or refusal by physicians to furnish reasonably

necessary reports; unreasonable administrative interference with matters properly within the discretion and control of the attending physician; differences relative to remuneration for professional services; unethical conduct in care, treatment, and examination of injured employees and reports and oral testimony; and the competence of those serving on physicians' registers. The advisory medical committee should recommend the removal of any name from a register, if complaints are justified.

3. Cooperation with the administrative agency in educational programs for all concerned on clinical and administrative problems and the development of proper medical report forms, desirable legislation to improve the workmen's compensation system and its administration, and the preparation of handbooks for physicians.

Suggested Responsibilities of the Individual Physician

In describing the role of the individual physician, the report points out that his primary obligation is to see that his patient is restored as nearly as possible to the economic and personal effectiveness which he possessed before he was injured. This requires not only competent and impartial medical care but also that the physician use or recommend the use of other technical skills and resources available, whether in the community or not. Other obligations inherent in medical services to the occupationally disabled are:

1. To furnish promptly, and to the same extent, concise accurate information and reports descriptive of the disability to the patient or his dependents, to the employer, to the workmen's compensation carrier, and to the administrative agency.

2. To testify before the administrative agency upon reasonable notice. The physician's testimony must adhere to reasonable scientific deductions regarding the injury, disease or possible sequelae to the end that every deserving claim receives just consideration.

3. To request consultation in case of serious illness, especially in doubtful or difficult conditions, and to agree to consultation with mutually acceptable physicians when requested by one of the interested parties.

4. To determine by scientific methods and upon the basis of objective measurable factors the permanent anatomic or functional impairment of a specific member or of his patient as a whole as compared with normal. From the medical standpoint, permanent anatomic or functional impairments cannot vary because of geographic locations or circumstances in which they were incurred. Therefore, the physicians should determine the percentage of permanent impairment without regard to age, sex,

occupation or real, presumed or potential wage loss. The application of these and all other factors provided by law to the percentage of permanent impairment established by the physician is the responsibility of the administrative agency in determining the indemnity award. In general, physicians are no more qualified by experience or training to evaluate such nonmedical factors than any other disinterested individual.

Suggested Responsibilities of the Administrative Agency

The report recognizes that rehabilitation of the occupationally disabled requires a competent administrative agency with full statutory authority and responsibility. The agency must have more than adjudication and appeals functions; it must have an affirmative duty to see that the intent of the law is carried out. It may delegate functions, but it cannot abdicate responsibility. Proper discharge of this trust requires adequate resources in terms of qualified, permanent, professional personnel and proper facilities.

In addition to an advisory medical committee, the administrative agency should have a medical director, approved by the medical profession, and a qualified vocational counselor. As staff officers, they should be in charge of the administration of appropriate provisions related to the rehabilitation of the occupationally disabled and should participate in such policy-making deliberations of the agency. They should have the full support of their superiors and constantly strive to provide leadership and promote effective professional relations in their fields through the maintenance of approved professional standards and practices.

Indemnification versus Rehabilitation

In discussing indemnity—a matter too often considered no business of the physician—the report points out that the amount and method of indemnification have a direct and important bearing on an effective rehabilitation regimen. While over-generous indemnity can dull the will for rehabilitation, inadequate indemnity requirements can destroy an employer's incentive to support rehabilitation by providing him with an easier or cheaper alternative.

More important, inadequate indemnity can lower patient morale or force return to gainful employment in advance of clear-cut medical indications.

In view of these relationships, it is consistent for the medical profession to support methods of indemnification which contribute to, rather than obstruct, rehabilitation procedures. Certain factors merit consideration:

1. Inadequate cash indemnity encourages "lump-summing" of payments, which tends to interfere with rehabilitation motivations. The practice should, therefore, be limited to instances where dependable evidence supports the contention that such a payment would contribute to the over-all rehabilitation of the employee.

2. Workmen's compensation is not a relief program. It is the proper intent of the program that a disabled employee and his family should not suffer a serious reduction in normal living standards during the rehabilitation period. This requires that the benefit level be maintained at an adequate percentage of usual wage and include reasonable personal expenses incurred by the employee in the course of the rehabilitation process.

3. Physicians interested in a rehabilitation program acceptable to permanently disabled employees recognize that attempts to relate indemnity payments solely to loss of earnings is impractical and unscientific. While it is not the purpose of workmen's compensation to indemnify all individual consequences of a disability, such as pain, suffering and humiliation, the employee's right to personal effectiveness is not confined to employment or to a limited period. Personal motivation to maximum rehabilitation can be hindered by complete deprivation of indemnity for permanent disability, whether it be a member or an organ of the body. Therefore, indemnity for permanent disability should be related to the employee's permanent impairment of earning capacity—in effect the anatomic and functional handicap incurred in working for a given employer. Maximum rehabilitation should be based upon the effect of such a handicap on the earning capacity of the average employee so as not to penalize a disabled employee for exercising individual initiative.

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Carcinoma of the Nasopharynx

Treatment with Radioactive Cobalt

WAYNE W. DEATSCH, M.D., San Francisco

THE PURPOSES of this paper are to discuss briefly the clinical characteristics of carcinoma of the nasopharynx noted in 80 patients, to describe a technique of treatment with intracavitary radioactive cobalt, and to comment on the results of this treatment in 22 of the patients from 1949 to 1954. The patients were observed at the University of California Hospital and were treated by or under the direction of L. F. Morrison, M.D., of the Department of Otolaryngology and B. V. A. Low Beer, M.D., and R. S. Stone, M.D., of the Department of Radiology.

In an effort to add to the current method of treatment with external x-ray irradiation, when the use of radioactive cobalt was developed for intracavitary irradiation⁸ its use in treating carcinoma of the nasopharynx was begun in 1949. Of course, intracavitary irradiation with radium applicators had been used previously, with good results reported by some investigators^{4,6,9} and indifferent results by others.^{5,10}

CLINICAL CHARACTERISTICS

Carcinoma of the nasopharynx is not a common disease, comprising only 0.3 per cent to 0.4 per cent of all malignant lesions^{4,7} and only 2 per cent of all malignant growth of the head and neck.⁶ There was record of only 97 cases at the University of California Hospital since 1932, where it represented 0.7 per cent of all cases of malignant disease.

Although it is not the most frequent, it is one of the most malignant growths of the upper respiratory and alimentary tracts. Reports of five-year survival rates in various series range from almost zero³ to around 20 to 25 per cent.^{1,4,5,6,10}

Carcinoma of the nasopharynx is an insidious disease and is often unrecognized until metastasis causes symptoms. The primary tumor in the nasopharynx causes relatively few symptoms in its early stages and must attain considerable size before causing local symptoms such as nasal obstruction, increased nasal discharge or a "plugged" ear. Persistent unilateral serous otitis media in an adult should be considered as being pathognomonic of a neoplasm of the nasopharynx until proved other-

• A method of treatment of carcinoma of the nasopharynx is described, using a bead of radioactive cobalt in a Foley catheter placed through the nose and inside the nasopharynx. As an aid in proper placement of the cobalt bead a portion of the nasal septum is removed first. This method of treatment is to supplement rather than replace other methods of treatment such as external x-ray therapy and surgical excision of lymph nodes in the neck.

Twenty-two patients were treated with radioactive cobalt beads and the results indicated that it is a useful method for treating carcinoma in the nasopharynx.

wise. Since these tumors are usually anaplastic and tend to metastasize early, it is the metastatic lesion that usually causes the first symptoms.^{4,6}

In 47 per cent of the patients in the present series the initial symptoms were referable to metastatic lesions, and 73 per cent of the patients had metastasis at the time of first examination.

The most frequent initial symptoms were enlarged cervical nodes (37 per cent), and nasal obstruction or bloody nasal discharge (35 per cent). Unilateral deafness, pain in the ear, or "plugged" ear was the first symptom in 10 per cent of cases, and in another 10 per cent it was intracranial extension with cranial nerve involvement as evidenced by facial pain or unilateral cranial nerve paralysis. In 8 per cent there was no record of the initial symptoms.

This disease occurred more frequently in males (74 per cent) than females (26 per cent) and occurred predominantly in the middle age group—71 per cent between 30 and 59 years. The highest incidence in any decade was 28 per cent in the 50 to 59 year group. The youngest patient was two years and the oldest 77 years of age.

These data agree generally with other reports as to age and sex incidence and presenting symptoms and metastasis.^{4,6,7} Many investigators have noted the racial susceptibility of the Chinese to this disease; Digby and Khoo² reported the incidence to be 5 per cent of all cancer in China. With a large Chinese population in San Francisco, it is not unexpected that 27 per cent of the patients in the present series were Chinese.

Presented before the Section on Ear, Nose and Throat at the 85th Annual Session of the California Medical Association, Los Angeles, April 29-May 2, 1956.

In the treatment of patients in the present series, radioactive cobalt was used in the form of a bead contained inside a Foley catheter for ease of handling and positioning. The preparation of this bead and its activation and characteristics are fully described elsewhere.⁸ Briefly it can be stated that radioactive cobalt (Co^{60}) in the form of a bead offers a relatively inexpensive point source of gamma irradiation that is monochromatic, almost homogeneous, and has a mean energy of 1.2 million volts. The cobalt, before activation in a neutron reactor, is readily available and can be fabricated into any desired form.

With the patient under general endotracheal anesthesia, a posterior septectomy from the level of the middle turbinate to the floor of the nose is done, leaving a 1-inch portion of the septum at the columella. This provides greatly improved access to and visibility of the nasopharynx both for manipulation and positioning of the cobalt bead and for inspection and examination of the nasopharynx following treatment during the follow-up period. Bleeding at the time of septectomy is controlled with electrocoagulation and packing. The visible tumor in the nasopharynx is thoroughly cauterized at the same time.

The Foley catheter containing the cobalt bead in the center of the inflatable bag is then positioned in the nasopharynx through the nose and the bag inflated. The catheter can be firmly held in place with packing if necessary and the position of the bead checked by x-ray visualization. Placing the bead in the catheter with the inflated bag maintains the bead at a uniform distance from the surface of the nasopharynx and prevents local areas of overirradiation. The bead is left in position for the time calculated to give the desired dosage (usually 2,000 to 6,000 gamma r) and is easily removed after the catheter is deflated. The nasal packing is usually removed on the second to fourth day. (Postoperative bleeding has not been a problem.)

The patients are then given full courses of external x-ray therapy to the nasopharynx and also to cervical fields if there are palpable nodes in the neck. The radioactive cobalt therapy in this series did not replace, but rather supplemented, external x-ray irradiation.

RESULTS

Twenty-two patients with carcinoma of the nasopharynx were treated with radioactive cobalt in the five years from July 1949 to November 1954. Of these, 14 received initial treatment and eight were treated for recurrence of previously treated tumors. Of the 22 patients, 10 are living and 12 have died.

In three of the 14 patients treated initially with cobalt, the tumor was localized in the nasopharynx

TABLE 1.—Data* on Patients with Carcinoma of the Nasopharynx Treated with Radiocobalt (as Supplement to X-ray Irradiation)

	No. Patients	Living	Died
Initial treatment:			
Total	14	8 (57%)	6 (43%)
Localized lesion	3	3	0
With metastasis	11	5	6
Treatment of recurrence:			
Total	8	2 (25%)	6 (75%)
Localized lesion	1	1	0
With metastasis	7	1	6
Overall	22	10 (45%)	12 (55%)

* The period of follow-up observations varied. In only seven cases was treatment started five years ago or more.

TABLE 2.—Data* on Patients with Carcinoma of the Nasopharynx Treated without Radiocobalt

	No. Patients	Living	Died
Initial treatment:			
Total	53	19 (35%)	34 (64%)
Localized lesion	15	9 (60%)	6 (40%)
With metastasis	38	10 (26%)	28 (74%)
Treatment of recurrence:			
Total	5	1 (20%)	4 (80%)
Localized lesion	1	1	0
With metastasis	4	0	4
Overall	58	20 (35%)	38 (65%)

* The period of follow-up observation varied.

at the time treatment was begun; in the other 11 cases metastasis had already occurred. The three with localized disease are all living, and of the 11 who had metastasis five are living and six have died.

Of the eight patients treated for recurrent tumor, only one had disease localized to the nasopharynx, and he is still living after three years. Of the seven who had metastasis, one is living and six have died.

In the series of 22 patients, the four who did not have metastasis at the time cobalt therapy was begun are still living. Of the 18 others, six are living.

In only seven of the patients was treatment begun as long as five years ago. Three of the seven are still living.

Fifty-eight patients with carcinoma of the nasopharynx were treated by other means, consisting almost entirely of external x-ray irradiation. Of these, 38 have died and 20 are living, 13 of them five years or longer. Five were treated for recurrent tumor. One of them did not have metastasis and survived for over 15 years. Four had metastasis and none are alive. Fifty-three patients received initial treatment and 19 are living. Of 15 who had only a local tumor at the time treatment was started, nine are living; of 38 who had metastasis, ten are living.

DISCUSSION

The results obtained with radioactive cobalt therapy, although neither numerous enough to be

statistically significant nor old enough to supply data as to five-year survival, are interesting from several points of view. All the patients treated with local lesions are still alive, two as long as five years. This suggests that the addition of the radioactive cobalt therapy to the external x-ray irradiation may be of greatest value in providing better control of the primary lesion.

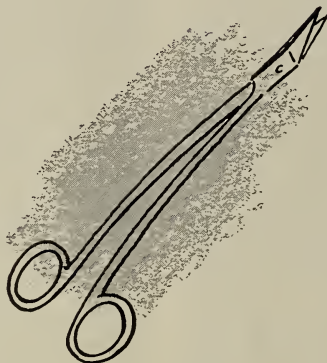
Eight of the patients treated for recurrence of tumor had already received full courses of x-ray therapy and were not candidates for further x-ray irradiation. A 25 per cent salvage in these patients is worthwhile.

It is also interesting to note that, although naturally the best results are obtained by any treatment when the tumor is localized, a smaller but substantial proportion of patients with metastatic tumor in cervical nodes or with evidence of erosion of the base of the skull were treated with some success. From this it can be concluded that patients with metastasis should not necessarily be given palliative therapy only, but should be treated with intense irradiation.

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Recurrent Pilonidal Cyst and Sinus

A Plan of Preoperative Preparation, Operation and Postoperative Care

REX L. ROSS, M.D., Los Angeles

THE VARIED surgical techniques proposed for the eradication of pilonidal cysts or sinuses are evidence of the lack of a completely satisfactory method of management of this surgical problem.

Most of the procedures have some merit and are based on seemingly sound surgical principles, but regardless of the methods employed, there is recurrence in a significant proportion of cases.

It is proposed here to present a plan of preoperative management, a not entirely new, but modified surgical technique, and rules of preoperative and postoperative care which have given excellent results, not only in primary, uncomplicated pilonidal cyst, but most especially in the chronic, recurrent and persistent cases.

For the purpose of evaluating the procedure herein described, a review was made, after a follow-up period of ten years or longer, of a series of 50 consecutive cases of pilonidal cyst and sinus in which this plan of preparation, operation and care was applied. These were chronic, persistent or recurrent cases. The patients had undergone, previously, from one to five operations for the condition, including incision and drainage, and various methods of excision. Figure 1 is typical of chronic, recurrent cases in which multiple sinuses have developed. At times, one of the sinuses may be located far laterally, necessitating a "T" type of excision.

In the series of 50 patients here reported upon, the duration of symptoms varied from ten days to six years. Healing was achieved in all but one in which overlapping of the approximated skin margins resulted in delayed healing in the lower half of the wound. There were no complications or sequelae except for annoying ingrowing hairs at the suture line in one patient. Since only 33 of the 50 patients could be located for accurate follow-up, these only were included in calculating recurrence rate. There were three recurrences or 9 per cent. The 33 patients were followed for a period of 10 years or longer.

Of prime consideration is the fact that in recurrent pilonidal cyst or sinus, the field dealt with is infected or potentially infected. In fact, many of the patients are seen in a state of acute exacerbation of

• Evaluation ten years following radical excision and primary closure of recurrent pilonidal cysts led to the conclusion that the method of preoperative and postoperative care and the surgical technique employed gave satisfactory results. In 50 patients operated upon, the duration of symptoms varied from ten days to six years. Primary healing was achieved in all but one case in which there was slight skin overlapping. Thirty-three of the 50 patients were located for appraisal at the end of ten years. Three had had recurrences.

The procedure involved eradication of acute infection preoperatively, wide, en bloc radical excision, with primary closure reattaching flaps centrally to the presacral fascia, and drainage of the depths of the wound.

infection, frequently with abscess formation. Others have draining sinuses, which may be single or multiple and fairly widely scattered in the sacrococcygeal region; and often there are areas of chronic inflammation and/or acute cellulitis.

If there is an acute abscess, it is opened by an incision just large enough for complete evacuation and subsequent drainage. All patients are instructed to take sitz baths for a half hour three to four times a day for several days before operation. Chemotherapy is started and continued throughout the preoperative, operative and postoperative period; usually it is discontinued after the fourth to seventh postoperative day. In the period covered by the present



Figure 1.—Typical chronic recurrent case in which multiple sinuses have developed.

Submitted May 10, 1956.



Figure 2.—Patient in operative position with adhesive traction straps in place.

study, the following plan was carried out: 30,000 units of penicillin was given intramuscularly every three hours, and sulfadiazine orally, 4 gm. daily, in divided doses. (At present, however, sulfadiazine is omitted and penicillin is given in a single daily injection of 300,000 units.)

Usually within a few days all acute cellulitis and active inflammation subsides and drainage from the sinuses decreases to a minimum. When the signs of inflammation in the surrounding tissues have disappeared and only slight irritation at the mouth of the sinus opening is present, and when the patients have been afebrile for several days, the lower back, sacral, gluteal, and perineal regions are carefully shaved and cleansed with green soap or Phisoderm.[®]

OPERATIVE TECHNIQUE

A low spinal anesthetic is given and the patient is placed in a prone position on the table, which can be broken at the pelvis, and a pillow is placed beneath the hips to elevate the gluteal region. Wide adhesive straps with tie-down ends are then applied, over tincture of benzoin, along the posterolateral aspect of both buttocks, leaving free an operative field extending on both sides to the junction of the middle and outer third of each buttock. The traction straps, which must be applied with equal tension on both sides, are of great importance, for they flatten the gluteal contours, making the dissection technically less difficult and allowing a more precise delineation of the area of excision (Figure 2). The operative field is prepared from the midlumbar region to the upper third of the thighs posteriorly. The anus is carefully isolated from the field by means of a folded sterile towel and skin clips.

The extent of the incision is next outlined, to allow for a wide block excision through normal healthy

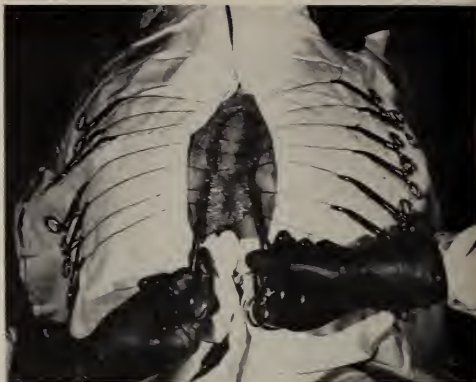


Figure 3.—Chromic catgut sutures in place. When tied they approximate soft tissues to the presacral fascia in the midline.

tissue, staying clear of all scarred or previously involved tissues in the central area. The incision begins at the junction of the middle and upper third of the sacrum and extends well down to the tip of the coccyx below, so that only a small margin of normal skin remains between the lower limits of the operative incision and the perianal skin.

A large percentage of the pilonidal cysts occur in the lower coccygeal region, but they also may extend higher over the sacrum or may be displaced laterally, especially in recurrent cases. Therefore, in order to be sure of including all secondary cysts or scattered sinuses, incision must be carried down through normal tissue, which can only be done by wide excision. The depth of the incision is down to the presacral fascia which is identified readily by its white, shiny, tough fascial surface. In extending the incision downward, one should maintain traction by elevating, with the aid of hemostats, the central block of tissue. Placing all the tissues on tension greatly facilitates dissection. Care should be taken to avoid cutting through old scars, branching sinus tracts or other areas of previous inflammation which may not have been circumscribed adequately. Any such suspicious area should be given wide margin.

The next step is the elevation of suitable flaps for closure of the fat and skin in the midline. Overlying the presacral fascia there is an area of fat and areolar tissue with tough fibrous strands and blood vessels, running more or less at right angles to the plane of the sacrum. This tissue is freed laterally and superiorly, the line of dissection remaining close to but above the presacral fascia, until the gluteal fat has been undermined for a distance of about an inch and a half.

All bleeding points are secured with plain No. 00 catgut ligatures. The lateral adhesive traction straps



Figure 4.—Mattress sutures of No. 30 stainless steel wire placed close together to approximate full length of incision, with only the drainage site at the lower angle of the wound left open.

are removed from both sides, thus permitting the sliding of the lateral flaps medially to close the midline defect. Interrupted sutures of chromic No. 1 catgut are then placed through the deep gluteal tissue on both sides and anchored to the presacral fascia in the midline. The free ends of the sutures are left long and are held back out of the way with hemostats (Figure 3). All the sutures are placed before any are tied. The sutures near the level of the coccyx are merely passed from the gluteal fatty flap on one side to that on the other side without going through the midline fascia, since if the lowermost sutures passed through the fascia overlying the coccyx, they might cause a variable amount of coxalgia by traction on the mobile coccyx.

Figure 3 shows the extent of excision, the flaps undermined and the interrupted sutures in place. The sutures are then tied, the highest pair first and then in order downward, approximating the soft tissues to the midline and anchoring them to the presacral fascia. A drainage incision an inch and a half to two inches long is then made downward and outward at a 45° angle from the tip of the coccyx. This incision is made through normal, healthy, fatty tissue. Communicating as it does at this level with the previously undermined space above, it provides an excellent escape vent for accumulated serum, blood or liquefied fat, a certain amount of which inevitably forms in the region which was fairly widely undermined, and which, without adequate drainage, is responsible for a great many of the wound complications and recurrences encountered with other procedures.

Closely applied interrupted vertical mattress sutures of No. 30 stainless steel wire are then used to approximate the full length of the incision, leaving



Figure 5.—Pyramidal dressing, folded pressure gauze over coccyx, conical gauze drain in place, and wide adhesive straps to prevent distraction of buttocks.

open only the drainage site at the lower angle of the wound (Figure 4). The sutures must be placed fairly close together to get good apposition; otherwise there is likely to be troublesome overlapping of the skin margins and poor healing due to the moist condition of the skin in this area. Using a long, curved needle with a cutting edge, the deep portion of the vertical mattress suture is placed so as to grasp a generous portion of the deep, soft tissue on either side and approximate the tissue to the midline, thus preventing distraction from the line of incision and relieving some of the tension on the underlying catgut sutures.

If one passes a finger through the drainage wound to the tip of the coccyx, sufficient space will be felt beneath the lowermost catgut suture to allow free drainage of the previously undermined area above this point. Two 3 x 4 inch gauze squares are then rolled diagonally to form a point at one end which is inserted up to the tip of the coccyx. The outer end of the gauze drain is sufficiently bulky to keep the fatty drainage wound open.

The application of the dressing is technically a very important step in promoting good wound healing. A pyramidal gauze dressing is applied in the gluteal crease in such a way that it will follow the contours of the sloping buttocks on either side. This is done by first placing a narrow folded gauze strip for the full length of the incision, and then three increasingly wider folded gauze strips above the first, so that each folded strip of gauze placed is wider than the one below it. Four 4 x 4 inch pads are then folded into a small cube and placed above the previously applied dressings directly over the coccyx. This step is important, for it affords gentle pressure over the coccyx as it slopes downward and



Figure 6.—Example of excellent primary healing two weeks after operation.

somewhat forward just above the anus. If this last pledget of gauze is not used there will be a dead space at this point which is not firmly supported by dressings. Adhesive straps are then placed across both buttocks to draw them together snugly against the pyramidal dressing (Figure 5).

The patient is instructed to lie flat on the back for six hours postoperatively. This position affords sufficient pressure to prevent vascular oozing from the depths of the wound. After that, if the patient can tolerate the position, it is best that he lie on the abdomen the greater part of the time. However, he may lie on either side. He must be instructed to change position carefully to avoid distraction of the wound. On the second postoperative day the conical shaped gauze drain is removed and replaced with a fresh one, using sterile precautions. The drain may be changed daily for three to four days thereafter, if necessary. By that time practically all of the drainage has ceased and the drainage wound is attempting to heal.

Penicillin is continued for a period of four to seven days postoperatively, depending upon the acuteness and extent of the infection present before operation.

The wound is not disturbed for ten days, at which time the dressing is changed for the first time. The wire sutures are removed ten to twelve days after operation. By that time the wound should be excellently healed per primum with a hairline scar. Figure 6 shows an example of excellent primary healing two weeks after operation.

All patients are instructed to avoid sitting as much as possible for two weeks, and, when sitting is necessary, to sit directly on the ischial tuberosities and not slump down in a chair with the weight on the sacrum and coccyx.

1033 Gayley Avenue, Los Angeles 24.



Hydroxydione Sodium (Viadril®) for Anesthesia

A Report of Clinical Experience

CHARLES D. ANDERSON, M.D., Oakland

HYDROXYDIONE SODIUM (Viadril®) is a steroid and is the first such product to be useful for producing anesthesia. Steroids of various kinds are produced in great quantities continuously by various organs of the body. These steroids play their roles in the economy of the human body and are then destroyed and eliminated. The capacity of the human body for the catabolism and elimination of steroids must be of a considerable magnitude.

Theoretically, then, the intravenous administration of Viadril into humans should not present, as other anesthetic agents do, an unusual demand on the tissues and organs of the body for the elimination of it. If clinical practice can substantiate this thesis, steroid anesthesia should eliminate most of the pathophysiological complications seen with other anesthetic agents.

This report is concerned with the use of Viadril in approximately 60 cases for anesthesia during surgical operation. In some cases the slow method of injection with 0.5 per cent solution of Viadril was used, which produced hypnosis in about ten minutes and anesthesia in 15 to 20 minutes, and in other cases the fast method of injection with 2.5 per cent solution of Viadril, which produced hypnosis in three to five minutes and anesthesia in seven to ten minutes, was used. Injection was not made directly into a vein by either method, but rather into a rapidly flowing intravenous infusion kit of 5 per cent dextrose in water which was connected to a large bore needle placed in a vein. This technique, which increased the dilution factor, was an attempt to diminish the irritant effect of Viadril on the intima of the vein.

Soon after hypnosis appeared, endotracheal intubation could be readily accomplished without the use of other anesthetic agents or the use of relaxant drugs. However, in almost all instances, supplementation with other anesthetic agents was necessary for complete surgical anesthesia. Nitrous oxide and oxygen was used for this purpose in practically all cases. Relaxant drugs to promote muscular re-

• Hydroxydione sodium (Viadril®) is a new anesthetic agent, derived from a family of chemical compounds not previously associated with anesthetic properties—namely, the steroids. The use of Viadril in sixty operative procedures provided the basis of this communication, which reports the signs of anesthesia and the main pharmacophysiological effects of Viadril as observed clinically.

laxation were frequently used. Occasionally meperidine (Demerol®) or a barbiturate was added. In a few instances, patients received supplementary injections of Viadril, one receiving a total of 3 gm. In a few cases the technique was reversed by initiating anesthesia with barbiturates and relaxants and then maintaining anesthesia with Viadril, nitrous oxide and oxygen. Regardless of the method used, uniformly satisfactory results were obtained.

The minimal dose for adults (ages 14 to 67 in the present series) is relatively constant at 750 to 1,000 mg. Such an initial dosage will produce mild anesthesia for about 60 to 90 minutes. Larger initial doses were necessary to produce deeper anesthesia and increased duration. The most frequently used dosages were in the range of 1,250 to 1,500 mg.

Signs of Anesthesia

The signs of anesthesia with Viadril as they were observed in this series were:

1. Onset of hypnosis without a period of excitement.
2. Dilatation of the pupil as hypnosis appeared.
3. Mild hypotension which was usually transient.
4. Tachycardia, in most cases, which usually lasted 20 to 30 minutes and did not appear to be wholly related to hypotension.
5. Decrease in either respiratory rate or respiratory volume or both. The respiratory pattern varied considerably between patients. The most frequent observation was a decrease in depth of respiration of varying degree. Whenever a decrease in respiratory rate was observed, it was always accompanied by a decrease in respiratory volume. In a smaller group of patients apnea occurred, which necessitated manual ventilation for 30 to 60 minutes.

Presented before the Section on Anesthesiology at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

From the Samuel Merritt Hospital, Oakland 9.

The Viadril used in this study was supplied by Charles Pfizer & Co., Inc., Brooklyn, N. Y.

During the second hour of Viadril anesthesia, the effect of the drug begins to wear off and further medication is needed. The most important sign of lightening of anesthesia was a rather rapid constriction of the pupil from the dilated stage. Usually this phenomenon occurred three to five minutes before the usual signs of inadequate anesthesia appeared, which gave time for supplementation of anesthesia.

Pharmacophysiological Effects

Noteworthy pharmacophysiological effects of Viadril on patients observed in the present series were:

1. *Hypnosis and analgesia.* Viadril is similar to barbiturates, but has a slower onset and a greater duration of effect. Also, as with the barbiturates, the analgesic effect of Viadril appears to be minimal.

2. *Vagotropic effects.* Whereas barbiturates are mildly vagotonic in effect, Viadril is definitely vagolytic. Such an effect is evidenced by—(a) pupillary dilatation, (b) frequently observed tachycardia, and (c) ease of endotracheal intubation.

3. *Depression of vital centers of the brain.* The decrease in respiratory ventilation and the hypotension that follows the onset of anesthesia with Viadril suggests a depressant effect on the vital centers of the brain. This effect is most pronounced during the first 20 to 40 minutes of anesthesia. Such a duration of depression of vital centers contraindicates the use of Viadril for short procedures unless the anesthesiologist is prepared to support the patient until the function of the vital centers returns.

4. *Decrease in muscle tone.* In 15 to 20 minutes following the administration of Viadril, muscle tone decreased. In some instances, laparotomy was done without the need or use of muscle relaxant drugs. However, in most cases, muscle atony was insufficient and muscle relaxant drugs were needed.

5. *Rapid catabolism.* The emergence of patients from Viadril anesthesia was quite unique. As the hypnosis lessened, the patient entered a stage of excitement which usually lasted about 30 to 60 minutes. Although the patient appeared awake, he was unaware of his surroundings and was not cooperative. To prevent injury, he had to be watched. Emerging from the excitement period, the patient looked and felt alert. Postoperative nausea and vomiting was minimal (the incidence was less than 10 per cent). Patients who received Viadril did not have the "hangover" effects usually seen with other forms of general anesthesia. This postoperative effect of Viadril was most striking and certainly suggested a rapid and complete destruction of the steroid by the body, with an absence of toxic end products from such catabolism.

Very early in the series, the greatest disadvantage of Viadril became apparent. Viadril, even in weak solution, is highly irritant to the intima of veins. At the time of injection, patients complained of pain or discomfort in the extremity receiving the infusion. Further evidence of the irritating quality of Viadril on the vein was the high incidence—more than 50 per cent—of postoperative thrombophlebitis which was observed both in patients who had discomfort and those who did not at the time of injection. Thrombophlebitis caused discomfort for weeks. Not infrequently the discomfort of the thrombophlebitic vein outlasted the discomfort at the operative site by days to weeks. Although attempts to modify the technique of administration of Viadril to decrease the incidence of thrombophlebitis were made, no satisfactory solution to the problem was found.

The high incidence of thrombophlebitis due to the irritant quality of Viadril in solution will hinder the wide acceptance of an otherwise very useful and highly desirable anesthetic agent.

Hawthorne and Webster Streets, Oakland 9.



CASE REPORTS

Reaction Following the Use of Miltown® (Miltown®)

CHARLES GEORGE STEFFEN, M.D.,
MAX CHERVIN, M.D., and
BRUCE VAN VRANKEN, M.D., Covina

INVESTIGATORS have recently studied a new tranquilizing drug, meprobamate, or 2-methyl-2-n-propyl-1,3-propanediol dicarbamate, which is marketed under the names Miltown® and Equanil®. There have, however, been few reports of toxic effects of this drug. In the case here reported, severe reaction followed the ingestion of Miltown.

REVIEW OF THE LITERATURE

Berger¹ studied the pharmacological properties of Miltown. He stated that small doses brought about muscular relaxation and sedation and that the drug had a duration of action about eight times longer than that of mephenesin. Selling³ reported the results of administering Miltown to 187 patients with various psychiatric disorders. He concluded that it was a practical, safe and clinically useful central nervous system depressant. Borrus² also studied the clinical effects of Miltown and he concluded that it proved most effective in anxiety states and offered promise in such diseases as epilepsy and paralysis agitans.

There have been few toxic effects of the drug reported. Berger¹ indicated that in animal studies Miltown was even less toxic than mephenesin. Large doses were tolerated without ill effects. Selling³ said that in the series he observed only three patients had allergic response to Miltown. Two of them had fainting spells and a temperature of 102° F. two and a half hours after administration of two 400 mg. tablets. It took two days for the first patient's fever to go down and for edema to disappear. Urticaria developed in the second patient after four days of treatment with Miltown. In the third patient angio-neurotic edema developed after Miltown had been taken for six days. Borrus² noted no complaints of dizziness, vertigo, nausea, vomiting, diarrhea or dermatological manifestations while the patients in the series he reported upon were receiving Miltown.

From the Department of Dermatology, University of Southern California (Steffen).

Submitted May 23, 1956.

REPORT OF A CASE

The patient was a 47-year-old white man who had no serious illness until February 24, 1956. On that day he became emotionally upset because of the death of his mother and was given a tablet of Miltown (400 mg.) by his wife. Five hours later he noticed the onset of a shaking chill, generalized feeling of malaise, weakness, redness of the face and frequent yawning. Forty-five minutes after the onset of these symptoms, and because of them, he took a capsule of Transibarb® (containing d-desoxyephedrine hydrochloride 2.5 mg., phenobarbital 16.2 mg., dl alpha tocopheryl acetate 5 mg.). The vertigo and nausea continued and the patient reported to a physician.

Upon examination at that time the patient was observed to be somewhat apprehensive, perspiring and apparently uncomfortable. The temperature was 103° F. There was blotchy erythema over the entire body, greatly accentuated over the bathing trunk area, where there were scattered innumerable pinpoint petechiae. The erythema blanched on pressure. There were no lesions of the mucous membranes. Except for a pulse rate of 130, no other abnormalities were noted on physical examination.

The patient was admitted to the hospital immediately. An attack of syncope occurred shortly after admission while the patient was undergoing roentgenologic examination. He fell, receiving a laceration over the occipital area of the scalp.

Leukocytes numbered 11,600 per cu. mm. of blood—4 per cent stab forms, 76 per cent segmented neutrophils and 20 per cent lymphocytes. There were 94,000 platelets per cu. mm. A Rumpel-Leede tourniquet test caused an abnormal number of petechiae. Electrocardiographic examination was reported as showing sinus tachycardia.

The patient was treated with large doses of corticotropin (ACTH) intravenously, initially 20 units in 1,000 cc. of 5 per cent glucose in distilled water, and prednisone by mouth, 60 mg. the first day and then reduced rapidly. The erythema began to fade the following day and the temperature returned to normal after the second day. The blood cell content at this time was normal. The patient was discharged from the hospital after four days. Upon physical examination at that time no abnormality except generalized fine desquamation of the skin was noted.

COMMENT

The patient in the case here reported definitely had a toxic drug reaction. He ingested two drugs, Miltown and Transibarb. For the following reasons it is believed that the reaction was to Miltown: The patient noticed the onset of malaise, vertigo, flushing and yawning before he took Transibarb. The Transibarb capsule was taken because of the symptoms that developed after the ingestion of Miltown. There was no sudden change of the symptoms for the worse after the Transibarb was taken. Finally, the reaction was similar to reactions due to Miltown described by Selling.³ Miltown is now being advocated for a wide range of diseases.^{2,3} Few instances of toxicity following its use have been reported.

SUMMARY

A patient had severe toxic reaction following the ingestion of Miltown. This reaction consisted of vertigo, fever, syncope, erythema, purpura, and increased lymphocyte and platelet content in the blood. So far as is known, this is among the few reports of a severe reaction following the use of this drug.

248 West Badillo, Covina (Steffen).

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Untoward Reaction to Meprobamate (Equanil®)

NORMAN E. LEVAN, M.D., and
CARROLL F. MUNDY, M.D., Bakersfield

THE EXTREME PRESENT POPULARITY of the recently introduced ataraxic drug meprobamate* makes advisable wide dissemination of information concerning a severe and characteristic reaction which may appear as early as an hour after the first administration of the drug. A few instances of untoward reactions similar to the one herein described have already been recorded.^{1,2,3,4,5}

REPORT OF A CASE

The patient, a 32-year-old white woman, ingested one 400 mg. tablet of Equanil® (meprobamate) for the first time, on May 28, 1956. Two hours later she noted a warm flushed feeling and a few moments later a red rash, beginning about the neck and

From University of Southern California School of Medicine, Department of Dermatology, Los Angeles 33 (Levan).

* Meprobamate is marketed by Wallace Laboratories under the trade name of Miltown, and by Wyeth, Inc., as Equanil.

Submitted July 28, 1956.

rapidly spreading to involve the upper arms, axillae, chest and bathing trunk area. In addition, there was a feeling of faintness and some nausea. On examination four hours after onset of these symptoms the only significant physical abnormality was a bright red diffuse involvement of the skin in the areas mentioned, without appreciable edema, purpura or any urticarial component. A hemogram and results of urinalysis were normal.

The patient was given prednisone, 10 mg. orally every four hours, and rapid relief occurred; after two hours there was only mild erythema and slight itching of the groins and breasts and these symptoms disappeared within another day. A patch test of the skin for reaction to a crushed tablet of Equanil elicited some itching within 36 hours, but the visible reaction was so slight as to be doubtful.

To verify that meprobamate was the cause of the reaction, on June 20, 1956, the patient was asked to take a test dose of 100 mg. (one-fourth of a tablet). Instead she took an entire tablet. An hour later there was a recurrence, in more severe form, of the original reaction, with bright erythema of the same areas, six or seven brief fainting spells within a three-hour period, numbness of the legs, pronounced weakness, nausea and emotional upset described by the patient as "feeling ready to burst into tears." Relief was again achieved with prednisone, although more slowly than before.

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Postpartum Tetany and Psychosis Due to Hypocalcemia

PHILLIP L. ROSSMAN, M.D., and
ROBERT M. VOCK, M.D., Santa Monica

A 24-YEAR-OLD Mexican girl was brought to the emergency room of the hospital on March 10, 1955, at 5:30 p.m. because the family was concerned about her mental confusion which they said had been present for about three weeks. Vomiting and diarrhea had been present on and off for one week, diplopia for one day. The patient had delivered a normal infant on February 1, 1955. During the

From the Medical Clinic, Saint John's Hospital, Santa Monica.
Submitted January 30, 1956.

latter part of pregnancy she had had slight hypertension and mild albuminuria. When examined in the emergency room, the patient's temperature was normal; she was confused and disoriented but cooperative. Within a few minutes after admission she had a generalized tonic convulsion, then a clonic convulsion which lasted several minutes. The patient had not been taking insulin.

The tentative opinion was that she was having an epileptic form of seizure and symptomatic supportive therapy was given, including sodium Nembutal (pentobarbital) 0.25 gm., administered intravenously. The convulsion lasted about three to four minutes and was followed by deep coma.

Abnormalities noted upon complete examination were generalized flaccidity, small fixed pinpoint pupils, deviation of the right eye to the right and Babinski's reaction bilaterally. The patient was not perspiring and there was no nuchal rigidity. The blood pressure was 140 mm. of mercury systolic and 100 mm. diastolic.

It was the impression that the patient was in post-epileptic coma, but in view of the extreme flaccidity a neurological lesion was contemplated, such as a spontaneous hemorrhage from a cerebral aneurysm or a brain tumor. Idiopathic hyperinsulinism, diabetic coma, postpartum eclampsia and uremia were also considered.

No abnormalities were noted on examination of the spinal fluid. A specimen of urine obtained by catheter showed no sugar, a trace of acetone, one-plus reaction for albumin and 20 to 30 hyaline casts per field. The hemoglobin content of the blood was 10.5 gm. per 100 cc. and erythrocytes numbered 4,150,000 per cu. mm. Leukocytes numbered 19,000 per cu. mm.—neutrophils 92 per cent, lymphocytes 8 per cent, blood platelets adequate.

Within an hour after admission the patient began to move and moan. Upon reexamination no nuchal rigidity was noted. The pupils were equal and reacted to light. The external ocular muscles and the optic fundi were normal. The heart and lungs were normal to auscultation. Tendon reflexes were normal. Babinski's sign was absent. Milk was draining freely from the breasts.

A satisfactory diagnosis had not yet been established. The abnormalities in the urine suggested uremia as the most likely possibility. However, the blood urea nitrogen, nonprotein nitrogen and carbon dioxide combining power were within normal limits.

About an hour and a half after the convulsion, the patient was conscious but slightly confused. Transient quivering and stiffness of the fingers of the right hand was noted. A Chvostek test elicited contraction of the upper and lower lips, and upon attempt to evoke Trousseau's sign a definite carpal spasm occurred.

These new signs taken together with the recent pregnancy and the fact that the patient had been nursing her child suggested postpartum hypocalcemia with acute tetany. Members of the family said that the patient had not taken calcium during preg-

nancy, had not ingested much milk and had eaten only small amounts of meat about twice weekly. The patient had never had any thyroid therapy or surgical operations. Further studies of the blood were ordered and the patient was given intravenous calcium therapy.

Results of laboratory determinations were as follows:

On admission: Serum calcium 7.05 mg., serum phosphorus 3.2 mg., nonprotein nitrogen 28.0 mg. and blood urea nitrogen 6.0 mg. per 100 cc.; carbon dioxide combining power 44 volumes per cent. A Sulkowitch test showed normal calcium excretion. Repeated follow-up examinations of the urine were within normal limits in all respects. Total serum protein was 5.6 gm., serum albumin 2.8 gm. and serum globulin also 2.8 gm. per 100 cc.

Two days later (March 12): Serum calcium was 8.1 mg. per 100 cc.

Four days after admission: Serum calcium was 8.25 mg. per 100 cc. and serum phosphorus 3.8 mg. per 100 cc. The result of a thymol turbidity test was 1.2 units (normal up to 4). Cephalin flocculation reaction was negative. A bromosulfalein retention test was within normal limits. A serologic test for syphilis was negative.

The patient was given a high protein diet, and 25 gm. of serum albumin was administered intravenously. Nine days after admission following vigorous calcium therapy, the serum calcium was 9.4 mg. per 100 cc. and serum phosphorus 3.8 mg. per 100 cc. The total serum protein on March 19, 1955, was 7.6 gm., albumin 4.0 gm. and globulin 3.6 gm. per 100 cc. X-ray films of the skeleton showed no evidence of abnormality attributable to nutritional deficiency.

Throughout the subsequent period of hospitalization the patient remained conscious and free of convulsive episodes. Generalized hyporeflexia continued for about 72 hours, as did Trousseau's and Chvostek's signs. As was indicated by the serial blood calcium studies previously mentioned, the biochemical response to specific therapy was satisfactory. However, the delusions and hallucinations for which medical aid was initially sought persisted and were further accentuated during the hospital stay. Calcium was administered both orally and parenterally in the form of calcium gluconate. A vitamin D preparation (Ertron, 5 mg. daily) was added to this regimen but was later supplanted by dihydrotachysterol capsules, 1 cc. three times a day. During the early part of the patient's hospitalization and prior to the return of serum calcium to a normal level, bouts of tachycardia were observed. An electrocardiogram showed low T waves in A V F and diphasic T waves in V₂ and V₃. The QT interval was within normal limits. An electroencephalogram showed no focal or general abnormalities.

The patient was transferred to the psychopathic unit of the Los Angeles County General Hospital on the ninth day after admission, since mental symp-

toms had deteriorated to the point of violently disturbed behavior requiring psychiatric institutional care.

Improvement was noted after one month and the patient was discharged as mentally cured two months after onset. An electrocardiogram taken eight months later showed no change from the previous one except for an upright TV₃.

REVIEW OF LITERATURE

In 1830 Steinheim⁸ reported a case of tetany associated with pregnancy and lactation. Kehver⁶ in 1913 observed that the Chvostek sign was present in 75 per cent of all pregnant women. In an extensive review of the literature on tetany in relation to pregnancy, Anderson and Musselman¹ tabulated cases of idiopathic tetany, tetany associated with lactation, tetany associated with thyroid disease, tetany following thyroidectomy, tetany during pregnancy, tetany during delivery, tetany due to low calcium intake, exacerbation of tetany with menses, tetany with psychic changes and bilateral cataracts, and tetany due to loss of blood.

Maternal tetany with or without psychosis aroused widespread interest in the medical profession for the first time in the middle of the 19th century. Trousseau's name, so intimately connected with the present-day concept of tetany, was originally linked to this type of tetany to the exclusion of all other forms. The name of Trousseau's first treatise⁹ on the subject of tetany was "Contractures des Nourrices." In that treatise Trousseau reported observing in mothers with suckling infants the well-known phenomenon to which his name is attached. Having observed an "epidemic" of such "nursing contractures" at that time, he was led to believe that this was the most common form of tetany. Trousseau later realized the considerably broader aspects of tetany.

Frankl-Hochwart⁴ at the beginning of this century was the first to contribute a comprehensive and critical summary of the subject of tetany; and he described in detail case histories of the various aspects of the syndrome. With regard to maternal tetany he collected reports of 53 cases from the then existing literature and added 23 cases he had observed, making a total of 76. Frankl-Hochwart also observed epidemics of the various types of tetany occurring in certain groups of individuals at certain times of the year. He emphasized that the most outstanding common single factor among cases of maternal tetany was seasonal occurrence in the late winter and early spring. Three out of four cases of maternal tetany in the series he reported upon occurred between the months of January and April. The majority of patients belonged to the lower income groups. About 10 per cent of the patients in the series had symptoms of psychosis of a toxic metabolic type which in no way differed from postpartum psychosis not ascribable to any specific cause.

Greene and Swanson⁵ noted that in five of 18 patients with hypoparathyroidism a psychosis developed which took up to a month to improve. They described no specific type of psychosis in tetany, but a "toxic" type of delirium predominated, with delusions and hallucinations. They observed that sexual hallucinations, delusions of persecution, mental depression and tendency to suicide occurred. The psychic manifestations they noted, may be present only temporarily during and following a convulsion or they may persist for several months. The prognosis is usually good but the mental recovery is usually delayed one or more months after the serum calcium becomes normal. The cause of the psychosis is not known.

DISCUSSION

The differential diagnosis in the case of a female patient having generalized convulsions should include epilepsy, alkalosis due to hyperventilation, hypoglycemia, meningitis, tetanus, eclampsia, uremia, strychnine poisoning, brain tumor, cerebrovascular accident, and hypocalcemia. The latter can be due to a low calcium intake, negative calcium balance as seen in pregnancy and lactation, hypoparathyroidism either spontaneous or following the removal of a parathyroid tumor or after total thyroidectomy. Low serum calcium also occurs in so-called renal rickets where, because of renal insufficiency, the excretion of phosphates is impaired, causing a rise in serum phosphorus.³ This causes a decrease in serum calcium, probably due to the precipitation of insoluble calcium phosphate in the intestines. If the serum calcium levels become low enough, tetany and convulsions may occur. However, these complications are somewhat blocked by the coexistent acidosis.

The hypocalcemia in the case herein reported was the result of pregnancy, lactation and low calcium and low protein intake.

According to Best and Taylor² over 60 per cent of the skeletal calcium of the newborn is deposited during the last two months of prenatal life. However, the greatest loss of maternal calcium is to the suckling child, amounting to over 80 gm. secreted during a normal period of lactation (nine months) compared to 20 gm. of calcium lost during pregnancy. At the time of the convulsion the patient in the present case was five weeks postpartum; she was nursing her infant and had a heavy flow of milk. She had not taken the prescribed calcium supplement, she did not drink milk or milk products, and her protein intake (meat) was inadequate.

Protein foods tend to increase the absorption of calcium, since the latter forms soluble complexes with certain amino acids. Of the total serum calcium about 45 per cent appears to be bound by protein (nondiffusible), with the remainder present as calcium ions (diffusible). The nondiffusible calcium varies with the protein concentration of the plasma. Calcium concentrations are usually lower with hypalbuminemia; the globulin factor has a lesser effect.

The carbon dioxide combining power in the present case was 44 volumes per cent, which is almost a normal level. This may have had a tendency to aggravate the tetany tendency as the serum ionized calcium is probably increased in acidosis and decreased in alkalosis. The patient's vomiting and diarrhea were probably due to a nonspecific gastroenteritis and may have had some effect on the level of the carbon dioxide combining power.

Did this patient have hypoparathyroidism or postpartum psychosis? She had not had either a thyroid or parathyroid operation, which is the usual cause of parathyroprivic tetany. However, spontaneously arising cases have been reported.⁷ In hypoparathyroid patients the serum calcium is low, phosphorus is high and carbon dioxide combining power essentially normal. In patients with low calcium intake and/or lactation, the calcium is low and the phosphorus low or normal, as it was in the present case. The reported cases in the literature do not always clearly differentiate these two types of tetany, especially in relation to psychosis, hypocalcemia and lactation.

The onset of postpartum psychosis is within two to three weeks after delivery in four-fifths of the cases. There is usually some evidence of previous psychotic episodes and frequently there is some activating mental and physical stress such as prolonged labor, hemorrhage, puerperal infection, elderly primiparity, anemia, toxemia or constitutional psychopathic background. The onset in this case was five weeks postpartum, with malnutrition and possibly hyperlactation as stress factors.

Psychoses that occur in association with well-differentiated somatic disorders are of interest because of the opportunities they offer of correlating mental manifestations with tangible pathological factors. This is particularly true of the psychoses associated with disorders of metabolism. The clinical manifestations and the significant depression of the blood calcium level together with the history of poor dietary intake and superimposed lactation, can certainly not be disregarded in the course of the self-limited "postpartum psychosis" of the patient in the case herein reported. There is no reason to believe that there is a specific tetany psychosis.

However, the muscular disturbances of a neurological nature and the psychosis are both the result of a toxic process affecting the central nervous system.

TREATMENT

Treatment was directed toward correcting the calcium and protein deficiency by giving calcium intravenously at the outset and then orally, and by a high protein diet. A small amount (25 gm.) of albumin was given intravenously. Vitamin supplements, especially vitamin D, were also administered. Dihydrocholesterol was given to increase the intestinal absorption of calcium but its effect in patients with other than hypoparathyroidism is probably not needed.

SUMMARY

A case of hypocalcemia in a lactating mother who had been on a deficient calcium and protein diet is presented. The patient had psychosis, tetany and generalized convulsions, all of which responded to calcium therapy.

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For information on preparation of manuscript, see advertising page 2

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EDITORIAL

Voluntary Health Insurance

VOLUNTARY HEALTH INSURANCE, the lusty infant of the insurance world, continued its phenomenal growth last year and established new record highs in the number of people covered and the scope of their coverage.

A report just published by the Health Insurance Council showed *some* form of protection was in effect for 107,662,000 persons in this country.

The Health Insurance Council, comprising in its membership eight of the large associations of life and casualty insurance underwriters, represents an estimated 90 per cent plus of all commercial underwriting in the health insurance field. Its annual report, the tenth published, includes figures on commercial underwritings, Blue Shield-Blue Cross coverage and independent plans.

Continuing huge strides in this field have regularly amazed even insurance executives, who are accustomed to the cautious explorations of new fields of coverage in much the same manner as the physician watches new fields of therapy. Just as the physician is concerned with the health and life of people, the insurance man is concerned with the funds held in trust for policyholders or stockholders; he must not gamble or take undue risks.

In these circumstances it is amazing that this new field of insurance has matched in a few short years the coverage that took a century for life or fire insurance to attain.

Historically, voluntary health insurance goes back only to 1932, when the late Doctor Ray Lyman Wilbur produced a report for The Committee on the Costs of Medical Care which found that a national need existed for providing the common man with a means of paying his medical costs and, simultaneously, offered the voluntary method of providing

an insurance prepayment system as the approach for meeting this need.

Soon after the issuance of this report, hospitals started their prepayment plans, which today are known as Blue Cross. Some years earlier, physicians in the State of Washington had set up county-by-county medical prepayment plans, the first medical venture in this direction.

California was the first state to have a statewide medical care prepayment plan, when the California Medical Association organized California Physicians' Service. CPS issued its first contracts in 1939.

Under these stimuli the insurance industry entered the health insurance field in a more aggressive manner and, according to the new Health Insurance Council report, have succeeded in underwriting various forms of coverage for close to 60,000,000 persons at this time.

Statistically, the Health Insurance Council report shows that at the close of 1955, hospital expense insurance was carried by 107,662,000 persons, surgical expense protection by 91,927,000 and regular medical expense insurance by 55,506,000. These figures include both employed persons and dependents and are arrived at after eliminating duplicating coverages which would increase the totals to the extent that more than one coverage is carried by many persons.

In terms of growth, hospitalization insurance in 1955 recorded a gain of 6.1 per cent in the number of persons covered, compared with a population growth of 1.9 per cent. Surgical expense coverage showed a 7 per cent gain in 1955 and regular medical expense coverage went up 17.5 per cent.

Progress in these fields is in line with the experience of the voluntary health insurance programs. Hospitalization insurance, the oldest form of this type of coverage, attained high totals of coverage some years back and is now advancing more slowly.

Surgical coverage, the next oldest in the field, shows a greater percentage gain in 1955; and regular medical expense coverage, the youngest of these three, added the highest percentage gain.

Even newer in the health insurance industry is the field of major medical expense coverage. Where regular medical expense insurance is designed to provide payment for the calls of physicians in usual nonsurgical cases, major medical expense insurance is designed to give protection against unusually heavy costs in catastrophic, chronic or long-term illnesses. It takes up where regular hospital and medical care insurance leave off and generally provides for the payment of 75 or 80 per cent of the cost to the patient over and above his coverage under regular contracts. The percentage participation is designed to assure a measure of co-insurance by the contract holder, who is thus encouraged to keep his total costs to a level where he can meet the 20 or 25 per cent contribution which he must make.

This baby in the field chalked up a gain of 138 per cent in number of persons covered in 1955. At the year end, 5,241,000 persons had voluntary health insurance of this type, a striking growth evidence in an experimental sphere of insurance.

The Health Insurance Council report shows that Blue Shield-Blue Cross plans covered 50,726,000 people at the end of 1955 and that independent plans had enrolled another 4,530,000. Percentagewise, the commercial insurance companies show that about 95 per cent of their hospital insurance policyholders also carry surgical expense coverage and about 42 per cent have regular medical cost coverage.

The Blue Shield-Blue Cross plans show that 77 per cent of those covered for hospitalization have surgical coverage and 58 per cent have regular medical cost protection. The independent plans, smaller in size and generally catering to more highly selected groups, show 96 per cent of their hospitalization subscribers with surgical cost and 100 per cent with regular medical care coverage.

The Health Insurance Council report offers prime evidence of the validity of the arguments offered some ten years ago by medical leaders, who asked that government keep its hands off this field of personal protection and let professional men work it out. The coverage recorded at the end of 1955 shows beyond doubt that a lot of work has been done and that people throughout the country are today enjoying the protection against hospital, medical and surgical expenses which the medical leaders promised to deliver.

The report also points to fields where additional work needs to be done. Ideally, all people would have protection against hospital, surgical and medi-

cal expenses. Percentagewise, there are gaps in the number of people so covered. In these gaps lies the challenge of tomorrow.

In addition to verifying the claims of yesterday's medical leaders, the current report shows the continuing effort to make available to the people the type of health insurance protection that is desired. The rapid growth of major medical expense coverage—the so-called “catastrophic” coverage—gives proof of the willingness of medical and insurance people to satisfy demands for specific forms of protection which can pass actuarial standards. The insurance industry, in both its commercial and medical sides, acts as a trustee for pooled funds belonging to others and cannot engage in reckless or uneconomical coverage. Rather, on the basis of careful planning and experimentation it can develop new forms of protection in an orderly fashion and offer them full-blown to the public. The Health Insurance Council report shows that this pattern is being followed; if the major medical cost coverage follows the same pattern as other forms of protection, it will gain at an accelerated pace in the next few years.

In terms of dollars, the Health Insurance Council report shows that in 1955 the underwriters of voluntary health insurance paid out \$3,125,000,000 in benefits. While it may be argued that the nation's total hospital-medical bill is much larger than this sum, it must be borne in mind that the real function of health insurance is not to achieve a complete relief from financial cost to its contract holders but, as the Health Insurance Council puts it, “to provide timely benefits in sufficient amount to prevent ill health and accident from leading to financial hardship.” This goal has certainly been achieved for the millions of persons now covered by voluntary health insurance.

Medical leaders may well be proud of their role in helping achieve the record growth of this infant industry. Under their leadership the first steps were taken to provide protection against the costs of illness or accident. Under their continued maintenance of their own plans, operating competitively with other voluntary programs, the public has been provided with added and new forms of coverage and has been assured of constant research and experimentation under controlled conditions.

In short, medicine has carried out its public obligations in splendid fashion and stands ready to continue and improve its public service in the health insurance field. What it has done, moreover, it has accomplished without government aid or participation and without resort to government reinsurance of contracts.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 420th Meeting of the Council, Los Angeles, July 28, 1956.

The meeting was called to order by Chairman Lum in the Regency Room of the Ambassador Hotel, Los Angeles, at 9:30 a.m., Saturday, July 28, 1956.

Roll Call:

Present were President Charnock, President-Elect MacDonald, Speaker Doyle, Vice-Speaker O'Neill, Secretary Daniels, Editor Wilbur and Councilors Wheeler, Loos, Wadsworth, Pearman, Harrington, Sherman, Lum, Bostick, Teall, Kirchner, Varden, Heron, Carey and Rosenow.

Absent for cause, Councilors West, McPharlin and Reynolds.

A quorum present and acting.

Present by invitation during all or part of the meeting were Messrs. Hunton, Thomas, Clancy and Gillette and Mrs. Margaret Griffith of C.M.A. staff; legal counsel Hassard; Messrs. Ben H. Read and Eugene Salisbury of the Public Health League of California; county society executive secretaries Scheuber of Alameda-Contra Costa, Thompson of San Joaquin; Geisert of Kern, Marvin of Riverside, Foster of Sacramento, Nute of San Diego and Neick of San Francisco; Doctor Jay Ward Smith, assistant dean of Stanford University Medical School; Doctors Stafford Warren and Joseph T. Ross, dean and associate of UCLA Medical School; Doctors A. E. Larsen and William Gardenier and Messrs. Etchel Paolini and K. L. Hamman of California Physicians' Service; Mr. Rollen Waterson; Richard Blum, Ph.D.; and Doctors Dan O. Kilroy, Joseph F. Sadusk, Jr., Francis J. Cox and J. Philip Sampson.

1. Minutes for Approval:

(a) On motion duly made and seconded, minutes of the 418th Council meeting, held April 29-May 2, 1956, were approved.

(b) On motion duly made and seconded, minutes

of the 419th Council meeting, held May 2, 1956, were approved.

(c) On motion duly made and seconded, minutes of the 258th Executive Committee meeting, held May 2, 1956, were approved.

(d) On motion duly made and seconded, minutes of the 259th Executive Committee meeting, held May 26th, were approved.

(e) On motion duly made and seconded, minutes of the 260th Executive Committee meeting, held June 24, 1956, were approved.

2. Membership:

(a) A report of membership as of July 25, 1956, was presented and ordered filed.

(b) On motion duly made and seconded, 78 delinquent members whose dues had been received since the last Council meeting were voted reinstatement.

(c) On nomination duly made and seconded in each instance, two applicants were elected to Retired Membership. These were: John L. Steffy, San Diego County, and Martha A. James, San Francisco County.

(d) On nomination duly made and seconded in each instance, ten applicants were elected to Associate Membership. These were: George F. O'Brien, Alameda-Contra Costa County; Phyllis W. Brown, Orange County; Eloise Blinder, San Francisco

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County; George F. Baier, III, Lester H. Keys, San Luis Obispo County; Vernon G. Bugh, Arthur Burris, Jacob A. Kohn, Louis R. Nash, Leonard A. Swanson, Ventura County.

(e) On motion duly made and seconded in each instance, reductions of dues were voted for eight members for reasons of postgraduate study or prolonged illness.

3. *Financial:*

(a) A report of bank balances as of July 25, 1956, was presented and ordered filed.

(b) A report of income and expenditures for the fiscal year ended June 30, 1956, was presented and ordered filed.

4. *State Department of Public Health:*

Doctor Malcolm H. Merrill, State Director of Public Health, reported that the incidence of poliomyelitis cases was following about the normal seasonal pattern, with an increase in cases noted in the past two weeks. The percentage of paralytic cases, 69 per cent, is the highest since 1951. The highest incidence occurs in the age group under five years, where formerly it was in the 5 to 9 year age group. Doctor Merrill also reported that greatly increased supplies of Salk vaccine are now available through both public and commercial sources.

Doctor Merrill also reported that allocations of funds in aid of hospital construction had been arrived at for the 1956-1957 fiscal year, under which \$5,931,000 federal and matching state funds will be used. Approved for this period are 22 projects, including ten general hospitals and 12 other structures, including health centers, diagnostic or diagnostic-treatment centers, nursing homes, chronic disease centers and others.

5. *Medical Review and Advisory Board:*

Doctor Joseph F. Sadusk, Jr., chairman of the Medical Review and Advisory Board, reported that a start had been made into the causes and background of professional liability. He requested approval of several steps previously approved by the Board, including:

1. Approval of the educational program outlined in a letter to Councilors.
2. Printing of the educational program and mailing to all members.
3. Approval for starting conferences with county society committees and officers.
4. Implementation of the "San Mateo Study" should that be deemed desirable.

On motion duly made and seconded, these requests were voted approval.

Doctor Sadusk also reported that meetings with representatives of the State Bar were continuing on

the subject of professional liability. He also reported on the possibility of securing funds from other sources to study the selection and education of medical students.

Doctor Sadusk requested authority for the Board to screen all advertising and exhibits presented by professional liability insurance underwriters. It was agreed that the Board should be consulted on this and that a member of the Board should consult with the Advertising Committee of CALIFORNIA MEDICINE.

6. *Executive Session:*

The Council went into executive session for approximately an hour and then arose from executive session.

7. *Committee on Insurance:*

Councilor Kirchner discussed the revised disability insurance contract proposed for offering at the close of the current contract year, providing a \$400 monthly maximum disability payment for a term of three years for illness or lifetime for accident, premiums based on age brackets. On motion duly made and seconded, it was voted to approve the proposed contract.

8. *Committee on Fees:*

Doctor Francis J. Cox presented a proposed petition to be filed with the Industrial Accident Commission of the State of California, asking various changes in the fees and conditions included in the present industrial fee schedule. On motion duly made and seconded, the petition was approved and authority granted for it to be filed.

9. *Committee on Other Professions:*

Doctor J. Philip Sampson, a member of the Committee on Other Professions, presented a committee report which urged clarification of a phrase adopted by the House of Delegates relating to the giving of intravenous injections by registered nurses. On motion duly made and seconded, it was voted that the Council define the phrase "under medical supervision" as meaning "Upon the oral or written order of a Doctor of Medicine for a specific patient."

Doctor Sampson also presented the committee's report and recommendations that further surveys of postgraduate training in other fields of the healing arts be carried on if indicated as desirable. On motion duly made and seconded, the report and recommendations were voted approval.

10. *Health Exhibit:*

Discussion was held on the requested cooperation of the Association with a newspaper in the promotion of a health exhibit. On motion duly made and seconded, it was voted to refer this request to the

Committee on Scientific Work, with the Public Relations department to be consulted.

11. *California Physicians' Service:*

Mr. K. L. Hamman reported that in areas where the \$6,000 income ceiling was in effect, the net growth of C.P.S. membership in the past year had been 22.35 per cent, compared with 5.64 per cent in other areas, and that 9.87 per cent of C.P.S. members are now covered under the higher ceiling. Mr. Hamman also stated that the gross income of C.P.S. had, for the first time in its history, exceeded \$30,000,000 a year. He also called attention to service costs of 86.26 per cent for the 1956 fiscal year, compared with 81.61 per cent the preceding year.

12. *Commission on Medical Services:*

(a) Councilor Carey, chairman of the Commission on Medical Services, recommended that the Committee on Maternal and Child Care be assigned as a subcommittee of the Commission on Public Health and Public Agencies. On motion duly made and seconded, it was voted to make this transfer.

(b) On motion duly made and seconded it was voted to make the Committee on Government Financed Medical Services a subcommittee of the Commission on Medical Services.

(c) Doctor Carey reported that the study of the cost of providing medical services for indigents in Butte County had been started under the direction of the Stanford University School of Medicine.

(d) Councilor Harrington, chairman of the Committee on Maternal and Child Care asked that a subcommittee on Maternal and Child Welfare be established for the purpose of studying maternal and perinatal deaths. He also reported that the State Department of Public Health was willing to employ investigators to look into the causes of such deaths. Cost to the Association in cooperating with this program would be not more than \$6,000. On motion duly made and seconded, these proposals were approved and the Committee on Maternal and Child Welfare was authorized to activate itself.

(e) On motion duly made and seconded, Doctor Chester L. Cooley was named as a member of the Commission on Medical Services, and chairman of the Committee on Indigent Care.

(f) On motion duly made and seconded, Doctor Thomas N. Elmendorf was elected a member of the Committee on Indigent Care.

13. *Committee on Legislation:*

(a) Chairman Dan O. Kilroy of the Committee on Legislation, reported the committee's recommendation that community mental health facilities be established as departments of general hospitals and be operated in the same manner as other medi-

cal departments of the hospital. He stated that the committee was prepared to draft proposed legislation to cover such provisions if Council approval were given. On motion duly made and seconded it was voted to authorize the preparation of such legislation and its submission to the Council for final action.

(b) Doctor Kilroy reported that legislation was in preparation to permit a more definite referral service to school children to specified types of the healing arts, with the exception of cases involving the eyes.

14. *Practice of Medicine in Medical Schools:*

On motion duly made and seconded, the Council Chairman's nominees for appointment to a special Committee on the Private Practice of Medicine by Medical School Faculty Members were approved.

15. *Public Relations:*

(a) On motion duly made and seconded, it was voted to approve a First Aid chart for production and distribution in school rooms and elsewhere.

(b) On motion duly made and seconded, it was voted to approve a Newsletter prepared by the Public Relations Department.

16. *Committee on Industrial Health and Rehabilitation:*

On motion duly made and seconded, it was voted to receive for publication an article submitted by a subcommittee of the Committee on Industrial Health and Rehabilitation which had been presented at the 1956 Annual Session, provided the committee chairman approved such article as coming from his committee.

17. *California Medicine:*

(a) On motion duly made and seconded, it was voted to approve a trip by members of the Advertising Committee of CALIFORNIA MEDICINE to meet with advertising representatives in eastern cities.

(b) On motion duly made and seconded, a resolution was adopted to commend a nonmember for his valuable contributions to the work of the Advertising Committee over a number of years.

18. *Student American Medical Association:*

On motion duly made and seconded, it was voted to approve the expenditure of not more than \$2,000 from the budgeted funds of the Public Relations Department to assist the San Francisco Medical Society in holding a series of meetings with medical students, interns and residents.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 6:15 p.m.

DONALD D. LUM, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

CALIFORNIA MEDICAL ASSOCIATION

Annual Meeting

Ambassador Hotel

LOS ANGELES

April 28 - May 1, 1957

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted to the appropriate section secretary (see list on this page) no later than November 19, 1956.

Scientific Exhibits

Space is available for scientific exhibits. If you would like to present an exhibit, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association no later than December 1, 1956. (No exhibit shown in 1956, and no individual who had an exhibit at the 1956 session, will be eligible until 1958.)

SCIENTIFIC PAPERS

SCIENTIFIC EXHIBITS

PLANNING MAKES PERFECT
AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

ALLERGY William J. Kerr, Jr.
711 D Street, San Rafael

ANESTHESIOLOGY Howard S. Downs
332 North Glendale Avenue, Glendale 6

DERMATOLOGY AND SYPHILOLOGY . . Edwin M. Hamlin
2932 North Fresno Street, Fresno

EAR, NOSE AND THROAT Seymour Brockman
2007 Wilshire Boulevard, Los Angeles 57

EYE Harold B. Alexander
14 West Valerio Street, Santa Barbara

GENERAL PRACTICE Thomas N. Elmendorf
Masonic Building, Willows

GENERAL SURGERY W. Kenneth Jennings
233 West Pueblo Street, Santa Barbara

INDUSTRIAL MEDICINE AND SURGERY . . Earle T. Dewey
600 Stockton Street, San Francisco 20

INTERNAL MEDICINE Donald W. Petit
960 East Green Street, Pasadena 1

OBSTETRICS AND GYNECOLOGY . . . Keith P. Russell
511 South Bonnie Brae, Los Angeles 57

ORTHOPEDICS Raymond M. Wallerius
2909 J Street, Sacramento 16

PATHOLOGY AND BACTERIOLOGY . . Dominic A. DeSanto
Mercy Hospital, San Diego 3

PEDIATRICS Sidney Rosin
6230 Wilshire Boulevard, Los Angeles 48

PSYCHIATRY AND NEUROLOGY . . . Howard A. Black
2901 Capitol Avenue, Sacramento 16

PUBLIC HEALTH James C. Malcolm
15000 Foothill Boulevard, San Leandro

RADIOLOGY Stanford B. Rossiter
1111 University Drive, Menlo Park

UROLOGY Edmund Crowley
1930 Wilshire Boulevard, Los Angeles 57



WOMAN'S AUXILIARY

TO THE CALIFORNIA MEDICAL ASSOCIATION

Your Auxiliary and Legislation

THE HISTORY of the Woman's Auxiliary to the California Medical Association shows an interest in legislation from the very beginning of the organization. Some years have found the Auxiliary more interested than others due to the necessities of the day. However, we now find there is something always taking the headlines for the legislative chairman to pursue. Today even the smallest Auxiliary is sure to have some form of legislation affecting it. We have come to know that we have to be alert on the local, city or county, state, and finally the national level in all fields of legislation affecting the public health and organized medicine.

We use various means to inform our membership about legislation. We have study groups, newsletters and a brief report to the membership at a general meeting.

We receive our information from your association and the parent organization, the American Medical Association. When a call comes from your organization asking for our help, we contact the county legislative chairman, and she in turn contacts the local membership. Because we have studied and informed ourselves, we are able to act.

Is there a medical vote?

News media today often headline a labor vote or some other voting bloc. When a piece of legislation is of interest to organized medicine, it is headlined "American Medical Association 'sponsors' or 'against.'" That applies equally to the California Medical Association and the county societies. That headline is You! Instead of the home town paper saying Doctor Doe is for or against, the headline is "organized medicine," meaning the A.M.A. or C.M.A.

When a legislator is asked by a physician to vote on a piece of legislation, the legislator often thinks that maybe one or two physicians "back home" are all that are interested in this piece of legislation.

Of course physicians do not vote as a bloc, but in most matters affecting the practice of medicine, physicians usually are pretty much of one mind.

Does the legislator know what the medical vote is?

Many political analysts believe that two per cent of the vote can turn the tide in an election. As a case in point, California in the last June primary had 5,437,403 registered Democratic and Republican voters. Two per cent of that is 108,748. Hence, for physicians and their wives to swing an election statewide, they would need to influence 108,748 votes. The combined membership of the C.M.A. and the Auxiliary is about 22,000. If every member of the California Medical Association and every Auxiliary member influenced five people on election day, that would be 110,000 or more than the two per cent which can turn the tide in an election. This may appear to be dreaming, but surely one well-informed, active person can influence five people. Actually, the potential is more. So when next you or I speak to Senator Doakes or Congressman Doe, we have a potential with which to impress him.

No other profession has been maligned and attacked more than the medical profession has been from time to time. Perhaps the anonymity in public affairs that the ethics of the medical profession instills into the individual physician has contributed to this situation. Hence, only in unity and by speaking collectively can organized medicine meet the challenge that confronts it.

We of the Auxiliary have the same aims you have. We have the opportunity to let our light shine in the day-to-day contacts we have. Is your wife a member of the Auxiliary? If she is not, she and you are missing a great opportunity to be informed on matters of vital concern to your profession. In an atmosphere of comradeship and friendship she can learn of the issues affecting medicine. She can be your ambassador of good will.

MRS. EVERETT B. STONE
Legislation Chairman

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

A series of 13 weekly lectures in medicine for general practitioners will be given at the East Oakland Hospital, 2648 East 14th Street, Oakland, beginning September 18, by members of the faculty of the University of California School of Medicine in San Francisco.

The lecture series has been approved by the California Academy of General Practice for 25 hours of postgraduate work.

Sessions will be conducted on Tuesday evenings at 8 p.m., through December 11. Lecture topics are "Practical Aspects of Liver Disease," "Office Considerations of Kidney Diseases," "Practical Therapy of the Anemias," "Surgical Diseases of the Colon," "Current Treatment of Arthritis," "Functional Heart Diseases," "A Rational Approach to Antimicrobial Therapy," "Common Neurological Diseases," "Low Back Injuries, Diagnosis and Treatment," "Nursery Problems for the Physician in General Practice," "Prevention of Coronary Heart Disease," and "Evaluation and Use of New Drugs in Office Practice."

LOS ANGELES

Recently elected officers of the Los Angeles Radiological Society for 1956-57 are Dr. Hubert J. Prichard, president; Dr. Richard A. Kredel, vice-president; Dr. Putnam C. Kennedy, treasurer, and Dr. Lewis J. Peha, secretary.

* * *

The Los Angeles County Heart Association has established a chair of Cardiovascular Research at the UCLA School of Medicine, and Wilfred F. H. M. Mommaerts, Ph.D., has been appointed professor of medicine (experimental cardiovascular research) and director of the Cardiovascular Research Laboratory.

Dr. Mommaerts was previously associate professor of biochemistry at Western Reserve University Medical School.

* * *

The United States Public Health Service has granted \$11,500 to the College of Medical Evangelists School of Tropical and Preventive Medicine for continued study of poisonous and venomous fishes. Cutter Laboratories, Berkeley, has provided \$2,500 to the school for study of drugs utilized by primitive native peoples. Both grants will be used by the school's section on biotoxicology.

Dr. Roger Barnes, chairman of the department of urology, College of Medical Evangelists School of Medicine, is now in Vellore, India, as a Fulbright scholar, lecturing in urology at the Christian Medical College. He will return to his CME post next July, according to an announcement from the school.

The school also announced several faculty changes and appointments. Dr. Clarence Stafford was appointed acting chairman of the division of surgery, and Dr. Howard S. Downs and Dr. Robert B. Shearer were named executive secretaries of the departments of anesthesiology and ophthalmology, respectively.

Drs. Morton Wolley and Richard Beltz were appointed instructors in the division of surgery and the department of biochemistry.

SAN FRANCISCO

Activities of the San Francisco District of the U. S. Food and Drug Administration, Department of Health, Education, and Welfare, will be shown on the half-hour TV show, "Success Story," KGO Channel 7 (San Francisco). The show will go on the air at 7:00 p.m. September 20, 1956.

Among the activities to be shown will be FDA inspectors making factory inspections of a food processing plant and a drug manufacturer. FDA chemists will be shown in the laboratory, analyzing food and drug samples, tasting tea samples, and testing fish for decomposition.

Also illustrated will be some recently exposed "quack" medical devices and FDA activities in Civil Defense and disasters.

This show is part of the nationwide observance of the 50th anniversary of the passage of the first Federal Food and Drug Law.

* * *

Appointments of six new heads of departments in the University of California School of Medicine, San Francisco, were announced last month. Those appointed and the departments they head are: Dr. Leon Goldman, surgery, succeeding Dr. H. Glenn Bell; Dr. Ernest Page, obstetrics and gynecology, succeeding Dr. Herbert Traut; Dr. Henry Brainerd, general medicine, succeeding Dr. T. L. Althausen; Dr. Salvatore P. Lucia, department of preventive medicine (a new department); Dr. Alexander Simon, psychiatry, to succeed Dr. Karl Bowman, who retired July 1, and Dr. Henry Moon, pathology, to succeed the late Dr. James Rinehart.

* * *

A two-day symposium on trauma will be held at the Franklin Hospital, San Francisco, September 29 and 30, for general practitioners, surgeons and industrial physicians. The program will present basic principles and recent developments in the management of the more common types of injuries.

The weekend symposium will be presented by the Active Staff of Franklin Hospital, in cooperation with University of California Medical Extension.

Further information and applications for enrollment may be obtained from Dr. Seymour M. Farber, Medical Extension, University of California Medical Center, San Francisco 22.

* * *

The 27th annual postgraduate symposium on heart disease of the San Francisco Heart Association will be presented October 3 to 5 in the Colonial Ballroom, St. Francis Hotel, San Francisco. Cooperating with the San Francisco Heart Association are the Heart Associations of Alameda, Monterey, San Mateo, and Santa Clara counties. Guest speakers will be Drs. Michael E. DeBakey, Houston, Texas; Lewis Dexter, Boston; F. Henry Ellis, Jr., Rochester, Minn.; Robert P. Glover, Philadelphia; Edward D. Neuhauser, Boston, and Louis Leiter, New York.

SANTA BARBARA

The annual meeting of the Southern California Chapter of the American College of Surgeons will be held at the Biltmore Hotel, Santa Barbara, January 18 to 20, 1957. Guest speakers will be Dr. Alfred Blalock, professor of surgery at Johns Hopkins University, and Dr. Henry Harkins, professor of surgery at the University of Washington.

GENERAL

The Seventh Congress of the **Pan-Pacific Surgical Association** will be held in Honolulu, Hawaii, November 12 to 22, 1957. Further information and brochures may be obtained by writing to Dr. F. J. Pinkerton, Director General of the Pan-Pacific Surgical Association, Room 230, Young Building, Honolulu.

* * *

Nationally known experts in the fields of surgery, neurology, obstetrics, gynecology, geriatrics, cardiology and dermatology will present papers specifically pertaining to the practice of the family doctor when the **California Academy of General Practice** convenes for its eighth scientific assembly October 14 to 17 at the Hotel Statler, Los Angeles, according to an announcement by the Academy.

Highlighting the program, the announcement said, will be lectures by Drs. Manuel E. Lichtenstein of Chicago, Christopher J. Duncan, Brookline, Mass., Sidney Farber of Boston, Clarence S. Livingood of Detroit, Richard W. Te Linde of Baltimore, Curtis P. Artz of Fort Sam Houston, Texas, and Edward J. Stieglitz of Washington, D. C.

Registration and further information is available from The California Academy of General Practice, 461 Market Street, San Francisco.

* * *

The tenth annual meeting of the **Western Society for Clinical Research** will be held Thursday afternoon, Friday morning, and Saturday morning, January 31 through February 2, 1957, at Carmel, California.

Information regarding the meeting may be obtained from Arthur J. Seaman, M.D., Secretary-Treasurer, Western Society for Clinical Research, University of Oregon Medical School, Portland 1.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education assemblies and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Fundamental Principles of Radioactivity Including Clinical Use of Radioisotopes. Wednesdays, September 19, 1956 through July 3, 1957. One hundred eighty hours. Fee: \$700.00.

Photography in Medical Practice and Research. Thursdays, September 20 through December 13. Twenty-four hours. Fee: \$35.00.

Surgical Anatomy. September 24 to November 26. Fee: \$75.00.

Basic Course in Ophthalmology. Wednesdays, September 26 to May 29, 1957. Fifty-eight hours. Fee: \$125.00.

Diagnostic Bacteriology-Immunology for Medical Technicians. Tuesday evenings, October 2 to December 18. Thirty hours. Fee: \$30.00.

U.C.L.A. Clinical Conferences. First and third Thursdays, October 4 to June 20, 1957. Twenty-seven hours. Fee: \$50.00.

Special Topics in the Pathological Physiology of the Cardiovascular System. Mondays, October 8 to December 10. Twenty hours. Fee: \$50.00.

Dermatology in General Practice. Wednesdays, October 17 through November 21. Twelve hours. Fee: \$30.00.

Aviation Medicine. October 24, 25, 26. Twenty-three hours.*

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Medicine for General Practitioners. East Oakland Hospital, Tuesday Evenings, September 18 to December 3. Twenty-four hours. Fee: \$50.00.

Postgraduate Seminar in Pharmacy. September 27 to 29. Fifteen hours. Fee: \$25.00.

Ophthalmological Conference on Glaucoma. September 27, 28, 29. Fifteen hours. Fee: \$60.00.

Symposium on Trauma. Franklin Hospital, September 29 and 30. Twelve hours. Fee: \$40.00.

Psychological Aspects of Medical Practice. Wednesday Evenings, October 3 to December 12. Twenty hours. Fee: \$40.00.

Seminars in Medical Technology. Tuesday evenings, October 2 to November 13. Twelve hours. Fee: \$15.00.

Medical Ophthalmology and Ophthalmoscopy. Thursday and Friday, November 1 to 2. Fourteen hours. \$60.00.

Cataract Conference. December 5, 6, 7. Twenty hours.*

New Diagnostic and Therapeutic Techniques. December 12, 13, 14. Fourteen hours.*

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: \$250.00 per month.

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MOntrorse 4-3600, Ext. 665.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Intensive Review of Internal Medicine. Especially designed for physicians planning to take their written examination for American Boards in Internal Medicine. Monday through Friday, 8:30 a.m. to 12:30 p.m. September 24 to October 5. Forty hours. Fee: \$65.00.

Home Course in Electrocardiography. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: \$100.00.

*Fees to be announced.

Pediatrics Clinics for the General Practitioner. Twenty weeks, October 9 through February 12, 1957, 8:30 to 9:30 a.m., Children's Hospital, Santa Anita Foundation Research Building Auditorium. Fee: \$40.00.

Bedside Clinics and Panel Discussions on Therapy in Internal Medicine. Los Angeles County Hospital, Thursdays, October 18 through January 24, 1957, 7:30 to 9:30 p.m. Twenty-four hours. Fee: \$65.00.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year. 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: \$30.00. (Each session all-inclusive.)

Conferences and Clinics in Endocrinology. All day, each day, November 29, 30 and December 1. Fee: \$65.00.

Conferences and Live Clinics in Diseases of the Liver and Biliary Tract. All day, each day, Friday, Saturday and Sunday, March 22, 23, and 24, 1957. Hotel Statler and Los Angeles County Hospital. Fee: \$65.00.

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Anesthesiology. Daily, full-time, six months, beginning each six months. Fee: \$300.

Surgical Anatomy, Dissection, Demonstration and Lectures. Monday and Wednesday, October 1, 1956 to June 5, 1957. 264 hours.

Surgical Anatomy, Dissection, Demonstration and Lectures on Upper and Lower Extremities. Monday and Wednesday, October 1, 1956 to January 9, 1957. 104 hours.

Surgical Anatomy, Dissection, Demonstration and Lectures. Wednesdays, October 3, 1956 to June 5, 1957. Seventy-four hours.

Surgical Anatomy, Demonstration and Lectures of Upper and Lower Extremities. Wednesdays, October 3, 1956 to January 9, 1957. Twenty-six hours.

General Urology. Mondays, October 1, 1956 to December 17, 1956. Twenty-four hours.

General and Surgical Pathology. Tuesday and Thursday, October 2, 1956 to June 4, 1957. 194 hours.

Traumatic and Minor Orthopedic Surgery. Tuesday and Thursday, October 2, 1956 to January 10, 1957. Thirty seven and one-half hours.

Roentgen Diagnosis and Therapy. Wednesday, October 3, 1956 to June 5, 1957. Thirty-three hours.

Surgical Physiology. Thursday, October 4, 1956 to June 6, 1957. Sixty-four hours.

Contact: Chairman, Section on Graduate and Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-9131, Ext. 205.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE COURSES

SACRAMENTO VALLEY CIRCUIT, in cooperation with Stanford University School of Medicine:

Dunsmuir—Monday, October 21, 28, November 4, 11.

Chico—Tuesdays, October 22, 29, November 5, 12.

Marysville—Wednesday, October 23, 30, November 6, 13.

Auburn—Thursdays, October 24, 31, November 7, 14.

WEST COAST CIRCUIT in cooperation with University of Southern California School of Medicine:

San Luis Obispo—Mondays, February 18, 25, March 4, 11, 1957.

Santa Maria—Tuesdays, February 19, 26, March 5, 12, 1957.

Santa Barbara—Wednesdays, February 20, 27, March 6, 13, 1957.

POSTGRADUATE INSTITUTES, 1957

SOUTHERN COUNTIES (Riverside, Orange and San Bernardino) in cooperation with University of California, Los Angeles, February 14 to 15, 1957, Disneyland Hotel, Anaheim.

WEST COAST COUNTIES in cooperation with University of Southern California, March 7 to 8, 1957, Golden Bough Theater and La Playa Hotel, Carmel.

SAN JOAQUIN COUNTIES in cooperation with University of California, San Francisco, March 21 to 22, Hotel Californian, Fresno.

NORTH COAST COUNTIES in cooperation with Stanford University, April 11 to 12, 1957, Odd Fellows Hall, Santa Rosa.

SACRAMENTO VALLEY COUNTIES in cooperation with College of Medical Evangelists, June 20 to 21, 1957, Tahoe Tavern, Lake Tahoe.

Contact: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill St., Los Angeles 13.

Medical Dates Bulletin

SEPTEMBER MEETINGS

WASHINGTON STATE MEDICAL ASSOCIATION Annual Meeting, Olympic Hotel, Seattle, September 16-19. **Contact:** Mr. Ralph W. Neill, executive secretary, 1309 Seventh Ave., Seattle, Washington.

LANE MEDICAL LECTURES OF STANFORD UNIVERSITY SCHOOL OF MEDICINE, "Biochemical Experiments in Endocrinology" by Professor Sir Charles Dobbs, Courtauld Professor of Biochemistry at the Middlesex Hospital in London. Evenings, September 17 to 21. **Contact:** Windsor Cutting, M.D., dean, 2398 Sacramento Street, San Francisco 15.

KERN COUNTY HEART ASSOCIATION and KERN COUNTY MEDICAL SOCIETY Annual Heart Symposium, Saddle and Sirloin, Bakersfield, 7:30 p.m., September 18. **Contact:** Eldon E. Geisert, executive secretary, 2603 G Street, Bakersfield.

SAN DIEGO COUNTY GENERAL HOSPITAL TENTH ANNUAL POSTGRADUATE ASSEMBLY, September 19-20. **Contact:** Howard B. Kirtland, Sr., M.D., Chairman Postgraduate Committee, 3505 Fourth Avenue, San Diego 3.

THE AMERICAN ROENTGEN RAY SOCIETY, Statler Hotel, Los Angeles, September 25 to 28. **Contact:** Wilbur Bailey, M.D., chairman, Local Committee, 2009 Wilshire Blvd., Los Angeles.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE ANNUAL MEETING, September 29, La Playa Hotel, Carmel. **Contact:** Mrs. Mildred B. Coleman, Assistant Secretary, Room 515, 350 Post Street, San Francisco 8.

OCTOBER MEETINGS

SAN FRANCISCO HEART ASSOCIATION Annual Postgraduate Symposium, October 3, 4, 5, 1956, St. Francis Hotel, San Francisco. *Contact:* Executive director, 604 Mission St., San Francisco.

AMERICAN CANCER SOCIETY, California Division, Annual Cancer Conference, October 4, 2 to 5 p.m., Fairmont Hotel, San Francisco. *Contact:* Otto Pflueger, M.D., Conference chairman, 384 Post St., San Francisco.

HERRICK MEMORIAL HOSPITAL Medical Staff Second Annual Postgraduate Symposium, 9 a.m.-5 p.m., October 5, Berkeley High School Little Theatre, Allston Way between Grove and Milvia, Berkeley, Calif. *Contact:* Administrator's Office, Herrick Hospital, Berkeley, or telephone: THornwall 5-0130.

AMERICAN COLLEGE OF SURGEONS Clinical Congress, San Francisco, October 8 to 12. *Contact:* American College of Surgeons Office, 40 E. Erie St., Chicago, Ill.

SAN DIEGO COUNTY HEART ASSOCIATION Professional Symposium, U. S. Naval Hospital Auditorium, Balboa Park, San Diego, October 9. *Contact:* O. Martin Avison, executive director, San Diego County Heart Association, 1651 Fourth St., San Diego 1.

LOS ANGELES COUNTY HEART ASSOCIATION 26th Annual Symposium on Heart Disease, Wilshire-Ebell Theatre, 4401 West 8th St., Los Angeles, October 10 and 11. *Contact:* Robert A. Pike, executive director, Los Angeles County Heart Association, 316 South Bonnie Brae, Los Angeles 57 or telephone DUnkirk 8-4127.

CALIFORNIA MEDICAL ASSOCIATION Regional Conference on Physicians and Schools, October 12 and 13, Santa Barbara. *Contact:* R. L. Thomas, assistant executive secretary, 450 Sutter Street, San Francisco.

CALIFORNIA ACADEMY OF GENERAL PRACTICE 8th Annual Scientific Assembly, Hotel Statler, Los Angeles, October 14, 15, 16, 17. *Contact:* William W. Rogers, executive secretary, California Academy of General Practice, 461 Market St., San Francisco.

CALIFORNIA MEDICAL ASSOCIATION second annual Conference on Physicians and Schools, Hacienda, Fresno, October 19 to 20. *Contact:* Robert L. Thomas, assistant executive secretary, California Medical Association, 450 Sutter St., San Francisco.

ALAMEDA-CONTRA COSTA DIABETES ASSOCIATION one-day Symposium on Oral "Insulinoids," October 22, Highland-Alameda County Hospital, Oakland. *Contact:* Institute for Metabolic Research, Highland-Alameda County Hospital, Oakland.

ORTHOPAEDIC HOSPITAL and RANCHO LOS AMIGOS RESPIRATORY CENTER jointly sponsor "A Seminar in Comprehensive Patient Care for Selected Neuromuscular Disabilities," October 22 to 26. All-day sessions beginning at 9:00 a.m. and one evening session, October 24. *Contact:* C. L. Lowman, M.D., Orthopaedic Hospital, 2400 S. Flower St., Los Angeles, or John Affeldt, M.D., Rancho Los Amigos, Hondo, Calif.

LETTERMAN ARMY HOSPITAL "Present Concepts in Internal Medicine," 8:00 a.m. to 4:30 p.m., October 29 to November 2. *Contact:* Major Max E. Knickerbocker, MSC, Chief of Education and Training Branch, Letterman Army Hospital, San Francisco.

NOVEMBER MEETINGS

LOS ANGELES UROLOGICAL ASSOCIATION Postgraduate Assembly, Ambassador Hotel, Los Angeles, November 12 to 16. *Contact:* Miss Vesta Fitzsimmons, executive secretary, 6253 Hollywood Blvd., Los Angeles 28.

VETERANS ADMINISTRATION HOSPITAL Conference on Pulmonary Diseases, each Thursday. *Contact:* William R. Haas, M.D., director, Professional Services, Veterans Administration Hospital, Oakland, Calif.

SONOMA COUNTY HEART ASSOCIATION Cardiovascular Symposium presented in cooperation with University of California Medical Extension, and Stanford University School of Medicine, Odd Fellows Hall, Santa Rosa, November 14. *Contact:* Thomas M. Torgerson, M.D., president, Sonoma County Heart Association, P. O. Box 844, Santa Rosa, Calif.

INTERIM SESSION, AMERICAN COLLEGE OF CHEST PHYSICIANS, Benjamin Franklin Hotel, Seattle, Washington, November 25 to 26. *Contact:* Murray Kornfeld, executive director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

CALIFORNIA CONFERENCE OF LOCAL HEALTH OFFICERS semi-annual meeting, Sacramento, November 27 to 28. *Contact:* Donald G. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley.

1957 MEETINGS

CALIFORNIA RURAL HEALTH COUNCIL Third Annual Conference on Rural Health, January 25 and 26, Hotel Senator, Sacramento. *Contact:* Glenn Gillette, associate director, Public Relations, California Medical Association, 450 Sutter Street, San Francisco.

AMERICAN FEDERATION FOR CLINICAL RESEARCH, Wednesday afternoon and Thursday morning, January 30 to 31, Golden Bough Theater and La Playa Hotel, Carmel.[†]

WESTERN ASSOCIATION OF PHYSICIANS, Wednesday morning and Friday afternoon, January 30 and February 1, Golden Bough Theater, La Playa Hotel, Carmel.[†]

WESTERN SOCIETY FOR CLINICAL RESEARCH, Wednesday afternoon, Thursday and Friday mornings, Golden Bough Theater and La Playa Hotel, Carmel.[†]

SOCIETY OF GRADUATE SURGEONS OF LOS ANGELES COUNTY Surgical Forum, March 4 to 8, Ambassador Hotel, Los Angeles. *Contact:* Wm. F. Roe, M.D., 14431 Hamlin St., Van Nuys, Calif.

REGIONAL MEETING INTERNATIONAL COLLEGE OF SURGEONS, Santa Barbara, California, April 1 to 2. *Contact:* Ross V. Parks, M.D., 1930 Wilshire Blvd., Los Angeles 57.

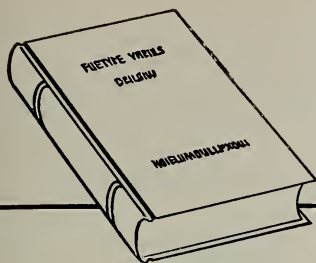
LETTERMAN ARMY HOSPITAL "Surgery in Acute Trauma," 8 a.m. to 4:30 p.m., April 1 to 3.[‡]

LETTERMAN ARMY HOSPITAL "Oral Surgery," 8 a.m. to 4:30 p.m., April 22 to 26.[‡]

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles, April 28 to May 1. *Contact:* John Hutton, executive secretary, 450 Sutter St., San Francisco 8, or Ed Clancy, director of Public Relations, 417 S. Hill St., Los Angeles 13.

[†] For information *contact:* Joseph Ross, M.D., associate dean, UCLA Medical Center, Los Angeles 24.

[‡] *Contact:* Major Max E. Knickerbocker, MSC, Chief of Education and Training Branch, Letterman Army Hospital, San Francisco.



THE PHYSICIAN'S *Bookshelf*

OBSTETRIC PRACTICE—Harold Speert, M.D., Associate in Obstetrics and Gynecology, Columbia University College of Physicians and Surgeons; Assistant Attending Obstetrician and Gynecologist, The Presbyterian Hospital; Alan F. Guttmacher, M.D. Director of the Dept. of Obstetrics and Gynecology, the Mount Sinai Hospital, Clinical Professor of Obstetrics and Gynecology, Columbia University College of Physicians and Surgeons. Landsberger Medical Books, Inc. New York, 1956, 478 pages. \$7.00.

This is intended to be a handbook for the general practitioner, proposed as a "practical, up-to-date guide" for him in the management of pregnancy and its complications. It impresses this reviewer as being a very general survey of current obstetrical practice, and is modern in its approach. The concepts represent the combined thinking of the two authors and the general practices of their respective institutions (Sloane and Mt. Sinai in New York), which are not always in agreement (example—management of diabetes in late pregnancy). The advice and recommendations regarding normal pregnancy and hygiene are sound and in accord with current obstetrical practice.

The handbook contains a good index. There is no bibliography, which is proper as this is not intended to be a textbook. Minor editorial objections may be noted, such as the use of the word "principal" for "principle" (p. 233).

This volume may be generally recommended for its intended purpose, and will find usefulness in the hands of the general practitioner who wishes to bring himself up to date in matters obstetrical on a rather broad scale.

* * *

THE MANAGEMENT OF MENSTRUAL DISORDERS—C. Frederic Fluhmann, B.A., M.D., C.M., Clinical Professor of Obstetrics and Gynecology, Stanford University School of Medicine, W. B. Saunders, Philadelphia, 1956. 350 pages, 121 figures, \$8.50.

This is an excellent book, by an erudite author. It deals with all facets of the complex process that is menstruation, and is not confined merely to the management of menstrual disorders. The latter occupies only one phase of the overall discussion. The textbook (for that is what this is) begins with an inclusive historical discussion of the concepts of menstruation. Following is a complete picture of the hormones involved in the process and their endocrinologic controls. Menstrual disorders are then thoroughly analyzed, based upon the author's extensive knowledge of and personal work done in this field. Specific methods of management are presented for the various abnormalities. The climacteric and menopause are very completely covered, and the book concludes with a discussion of clinical usage and commercial preparations of sex hormones.

This book can be recommended for the obstetrical specialist, for the internist, and for the endocrinologist. The clinical approach is emphasized throughout. The volume is a worthy successor to the author's previous text on menstrual disorders published in 1939.

OF RESEARCH PEOPLE—George E. Burch, M.D., F.A.C.P., Henderson Professor of Medicine, Tulane University School of Medicine, New Orleans, Grune and Stratton, New York, 1955. 56 pages, \$3.00.

The author has written a careful and thought-provoking essay upon a subject of concern directly to professional workers in the biologic sciences, and to the mass of lay consumers eager to learn the truth, but often forced to listen to prejudiced accounts unfortunately colored. Dr. Burch's carefully balanced and precise sentences demonstrate a type of insight not often found in essays of this character. There is a message for the investigator himself, which outlines his potential credulities and pitfalls. Although being a professional research worker is a full-time job, most investigators are pressured into spending their potentially productive time in dilettante activities, such as dispatching, speech-making, promotional activities and attending endless and meaningless committees. For the research assistant and research fellow, there is sound advice, especially in regard to the tragedy of "taking one's self too seriously." The research technician and other personnel, who often clutter the landscape of the research environment, may learn how to better evaluate their duties and conduct themselves in accordance. The "Research Director" comes in for his share of appreciation, terse and to the point. For the University Administrative Officer, the essay is a must. All in all it is sound and delightful reading. Unfortunately the book is hampered by illustrations appropriate for a Sunday comic strip but certainly unfit for so sapient a contribution.

* * *

CASIMIR FUNK—Pioneer in Vitamins and Hormones—Benjamin Harow. Dodd, Mead & Company, New York, N. Y., 1955. 209 pages, \$4.00.

The author has written an interesting biography of a restless person, who despite this attribute (usually a handicap in a scientist) was able to make significant research contributions. That Casimir Funk is a genius of unusual quality no one can deny, especially in the light of his preparatory training with its paucity of supervision, and the hazards of constantly changing his areas of work, intellectual and geographic. Though he often worked under circumstances which were inadequate and discouraging, he still managed to make some important basic contributions to biologic science in the fields of experimental nutrition, the chemistry of hormones, and especially in the commercial production of medicinal agents. No one could have been successful in these latter circumstances without basic knowledge of the principles of chemistry and manufacturing techniques, a singleness of purpose, and an outstanding devotion to an ideal. It is a pity that a man of such unusual talent should have had to indulge so many interests, many not to his complete satisfaction, and always under sub-optimal circumstances, in so many different laboratories.

The author has labored some of the sections by unnecessary repetition and summary, and by the use of descriptive language ostensibly aimed at lay readers. That Casimir Funk was able to make any contributions working under the conditions prevailing in so many different countries is truly a remarkable achievement.

* * *

BORDERLANDS OF THE NORMAL AND EARLY PATHOLOGIC IN SKELETAL ROENTGENOLOGY—Tenth Edition—Prof. Alban Kohler—Completely Revised with Reference to Illustrations and to Text by Dozent Dr. E. A. Zimmer, Bern/Fribourg, English Translation Arranged and Edited by James T. Case, M.D., D.M.R.E. (Cambridge) Professor Emeritus of Radiology, Northwestern University Medical School, Chicago. Grune and Stratton, Inc., New York, 1956. 723 pages, \$24.50.

Medical records are sometimes divided into three broad types: Records of conditions which are frankly abnormal; records of conditions which are apparently quite normal; and, finally, records of conditions of dubious normalcy. The latter constitute a source of frequent difficulty in teaching, in clinical practice and in research. The author of this book recognized this well-known fact many years ago and prepared an excellent treatise in German dealing with borderlines of the normal in skeletal roentgenology.

English editions appeared in 1928 and in 1935, both being sold out in a few years' time. The present edition is moderately enlarged since that of two decades ago, and remains replete with useful information on variations and anomalies of the skeletal system which are a common source of confusion and erroneous diagnosis in everyday practice. Many radiologists keep this volume beside a well thumbed copy of Gray's Anatomy as two of the most frequently consulted works in their library.

After an excellent section on fundamental considerations, there are chapters devoted to conditions of the upper extremity, the shoulder girdle, the thorax, the skull, the spinal column and pelvis, and finally the lower extremity. There is an adequate number of illustrations and diagrams. The references are satisfactory and the index reasonably so. The reviewer believes that this volume will continue to be of considerable use in clinical roentgenology for many years to come.

* * *

UROLOGY—B. G. Clarke, M.S., M.D., F.A.C.S., Associate Professor of Urology, Tufts University School of Medicine; and Louis R. M. Del Guercio, M.D., Assistant Resident Surgeon, St. Vincent's Hospital, New York. The Blakiston Division, McGraw-Hill Book Company, Inc., New York, 1956. 245 pages, \$6.50.

This little volume is another short compendium on urology, similar to others that have appeared in recent years, intended primarily for the student or physician who does not have available the specialty literature or who desires only very brief but accurate basic information. The book does contain very short descriptions of most of the modern urological diagnostic and therapeutic procedures, but with entirely too little detail to satisfy any real thirst for information about the techniques or problems involved.

Though the preface implies that the published book is based on the lectures given (presumably by the senior author) at the Tufts University School of Medicine, it is really not sufficiently complete for a textbook. The publishers suggest that it is to be read during the course and may be used for board reviews. For this latter purpose it is really little more than a very complete outline or index of the subjects to be studied.

The book has, however, some valuable features. It is quite up-to-date and has very brief descriptions of practically all of the more recent developments. It is accurate and scientific and one will find little to criticize in any of the statements.

It is made easy to read by the generous use of line drawings, x-rays, and photomicrographs. These are all well reproduced and usually accompanied by a concise history of the problem. This is a feature that might profitably be more generally adopted. Finally, the bibliography appended to each chapter is unusually good and to a certain extent makes up for the brevity of the text, for the reader who wishes to pursue any subject in greater detail will find there the references necessary for more exhaustive study.

The chief objection to the book has already been stated. To the urologist, at least, that it is too brief and that this brevity tends to oversimplify the subject and fails to recognize the extreme significance of the details so vitally important in the management of urological patients.

* * *

RETROLENTAL FIBROPLASIA—Role of Oxygen—Report of the Sixteenth M & R Pediatric Research Conference. Issued by M & R Laboratories, Columbus 16, Ohio, 1955. 62 pages.

This brochure of a symposium held under the auspices of the Department of Pediatrics, University of New York College of Medicine is a review of the various facets of retrolental fibroplasia.

This brochure summarizes the laboratory and clinical investigations prior to January 1955 and is of interest to both pediatricians and ophthalmologists.

* * *

SALIVARY GLAND TUMORS—Donald E. Ross, M.D., F.A.C.S., F.I.C.S., F.R.C.S. (Eng.), F.R.C.S. (Edin.), Diplomate, The American Board of Surgery, Chief Surgeon, Ross-Loos Medical Group, Los Angeles. Charles C. Thomas, publisher, Springfield, Illinois, 1955. 86 pages, \$7.50.

This book has the advantage of being concentrated, terse and well written. Parotid tumors and neoplasms of the salivary gland are reviewed, described and the pathology is discussed. There are some excellent cuts of microscopic slides of tumors, both low and high power. Surgical anatomy is carefully reviewed with salient structures involved in these problems brought out with excellent cuts. Criteria of surgery and the proper procedures are described and discussed.

Dr. Ross brings out the pertinent fact that tumors of the parotid are very apt to invade the capsule and therefore removal of the tumor with the capsule alone is rarely sufficient. Operation to correct paralysis of the fascial nerve is touched upon with illustrations.

This book is an excellent reference work in which the salient factors of these problems can be quickly reviewed.

* * *

COLLAGEN DISEASES—Including Systemic Lupus Erythematosus, Polyarteritis, Dermatomyositis, Systemic Scleroderma, Thrombotic Thrombocytopenic Purpura—John H. Talbott, M.D., Professor of Medicine, University of Buffalo School of Medicine, and R. Moleres Ferrandis, M.D., Training Fellow in Arthritis of the Western New York Chapter of the Arthritis and Rheumatism Foundation, Grune and Stratton, Inc., New York, 1956. 232 pages, \$6.50.

This small monograph presents, in well written form, a surprising amount of information concerning the disorders named in its subtitle. Each of the five chapters contains divisions on the history, incidence, and relation of the disturbance to other collagen disorders; etiology and pathogenesis, pathology, clinical and laboratory findings, diagnosis, course and treatment are described. Illustrations and index are satisfactory and the bibliography is extensive. In short, the work provides an excellent review of the so-called collagen diseases and may be recommended without reservation.

Notes on the Diagnosis and Management of "Dizziness"

III. Ménière's Syndrome



1. Paroxysmal Whirling Vertigo. *This consists of sudden attacks of dizziness, often when the patient is at rest or asleep. The patient may feel that he himself is whirling or that fixed objects about him are whirling. The attack usually lasts for a few minutes; occasionally it is severe for weeks or subacute for months.*



2. Subtotal Hearing Loss. *Deafness will usually affect the high tones and it may be unilateral or bilateral. Sometimes the hearing loss is severe and also progressive.*



3. Tinnitus. *This is usually unilateral and present in the ear with greater hearing loss and is without a definite pattern.*

Fewer diagnostic errors¹ will result if a "triad of symptoms" is required of patients with suspected Ménière's syndrome. These are the symptoms of typical Ménière's syndrome:

1. Severe paroxysmal vertigo which may be of two types; either the patient feels that he is whirling or that objects about him are whirling.
2. Fluctuating subtotal hearing loss, usually affecting the higher tones, is noted at the same time as vertigo.
3. Tinnitus, usually unilateral, is associated with the deafness and dizziness.

With Ménière's syndrome there is no definite localization² by the Bárány (vestibular reaction) test and results of the caloric test are not diagnostic. Physical examination should rule out disease of the central nervous or cardiovascular systems before a diagnosis is made.

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drome . . . will prevent or arrest attacks of vertigo. It will also reduce the intensity of the tinnitus and so may save some of the hearing in the affected ear."

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It is a therapeutic standard also for motion sickness and is useful for relief of nausea and vomiting of radiation sickness and fenestration procedures.

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1. DeWeese, D. D.: Symposium: Medical Management of Dizziness: The Importance of Accurate Diagnosis, Tr. Am. Acad. Ophth. 58:694 (Sept.-Oct.) 1954.
2. Jackson, C., and Jackson, C. L. (editors): Diseases of the Nose, Throat, and Ear, Philadelphia, W. B. Saunders Company, 1945, pp. 368; 414.
3. Queries and Minor Notes: Ménière's Syndrome, J.A.M.A., 141:500 (Oct. 15) 1949.

SEARLE

Arterial Surgery Relieves Adolescent Hypertension

Hypertension in a 15-year-old boy has been relieved by an unusual type of arterial surgery, four Cleveland physicians recently reported.

Diseased sections of the two arteries leading into the kidneys were replaced by arterial grafts from other persons. This is believed to be the first case in which both arteries were repaired by grafting, the doctors said in a recent issue of the *Journal of the American Medical Association*.

The boy's high blood pressure was caused by the diseased condition of the renal arteries. The walls of the arteries had become thickened, obstructing the passage of blood.

The operation was performed in two parts, at two-week intervals, with one artery repaired each

time. The boy's condition began to improve immediately and his blood pressure is now normal, Drs. Eugene F. Poustasse, Alfred W. Humphries, Lawrence J. McCormack and Arthur C. Corcoran said.

The origin of the kidney artery obstruction "must remain speculative," they said, adding that it may represent a youthful form of arteriosclerosis, although no other vessels were affected. The condition may be a basic flaw in the development of the arteries, or it may be a hitherto unrecognized type of hypertension in adolescence.

Two similar cases, which were fatal, led to recognition of the condition in the third patient and demonstrated the need for surgical correction of the renal arterial defect. The surgery was attempted and was successful.

The authors are from the Cleveland Clinic Foundation and the Frank E. Bunts Educational Institute.

Mechanical Kidney Used to Treat Drug Overdose

Barbiturates in poisonous doses can be successfully washed from the human body by using a mechanical kidney.

A group of Washington, D.C., researchers recently reported using a modified form of the machine to treat eight patients with severe barbiturate poisoning. As far as they know, theirs is the largest reported series of barbiturate-poisoned patients so treated.

A tube from the machine is attached to an artery. The blood is circulated through the machine where it is washed by a solution which removes the drug before the blood returns to the body.

The authors of the article in a recent issue of the *Journal of the American Medical Association* estimated that more than 15,000 patients are seen each year in the U. S. for accidental or intentional overdosage of barbiturates.

Treatment of barbiturate poisoning has varied. There is no well-established chemical antidote. Some authorities advocate the use of drugs which act as nervous system stimulators. Management has usually consisted of stomach washing, but patients frequently are seen too late for this to be effective.

The authors used hemodialysis for eight of 26 patients seen in a three-year period at Georgetown University Hospital. Hemodialysis was successful in six of the eight. The two others died of complications which dialysis could not help.

Hemodialysis can be successful even several hours after the drug is swallowed. However, the authors pointed out that it is more efficient the more promptly it is done.

Hemodialysis has two rather unique features for a treatment procedure, they said. The higher the blood level of barbiturates, the faster will be their

removal by hemodialysis, and the amount of drug removed increases with the severity of poisoning. Hemodialysis also improves both the patient's condition and its own efficiency as treatment proceeds. This happens because as the poison is removed, the patient's physical condition improves. As the heart rate increases, the blood flow through the machine is increased. This in turn allows a greater removal of the barbiturate from the body.

The authors said that the results of hemodialysis in their few patients cannot be discussed statistically, but their individual physical improvement offers reasons for its use. Hemodialysis unequivocally saved the life of one patient, markedly shortened the period of coma in one, and definitely helped four. In two patients with severe vascular disease, prompt clinical improvement was noted during treatment and full recovery from the drug's effect occurred within eight hours of the end of the procedure. One patient, who recovered after three periods of dialysis, had one of the highest initial blood levels of barbiturate ever recorded (25 mg. of barbiturate per 100 milliliters of blood). Thirty-seven per cent of the ingested drug was recovered.

Hemodialysis, when carried out by experienced persons, is worthy of extensive application in two basic situations, they concluded. First, when the amount ingested or the initial blood barbiturate level is clearly in the potentially fatal range for the particular barbiturate, and second, when the underlying physical state is likely to increase the hazards of coma.

The authors are Leonard B. Berman, M.D.; Harold J. Jeghers, M.D.; George E. Schreiner, M.D.; and Arthur J. Pallotta, M.S., of Washington, D.C. The study was supported by a grant from the National Institutes of Health.

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Describe New Heart Filming Technique

A technique for simultaneously filming actual heart movements and electrocardiograph readings was described recently by four California researchers.

The new technique, which combines several separate ones, provides a valuable tool for more extensive study of heart disease in humans. Drs. Myron Prinzmetal, Rexford Kennamer and Stanley M. Weiner, and John R. Bishop, A.B., Los Angeles, said in a recent issue of the *Journal of the American Medical Association*.

Cineradiography, the filming of x-ray images, was

first done in 1935. This is the first time that electrocardiograph tracings have been superimposed on the film containing pictures of the heart, the authors said. The electrocardiograph mechanically records the electrical currents emanating from the heart muscle.

The x-ray image is filmed indirectly by photographing the image as it is flashed on a fluoroscopic screen. Simultaneously the electrocardiogram is filmed through the use of a cathode ray tube and an optical system of lenses and mirrors.

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(Continued on Page 69)



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Describe New Heart Filming Technique

(Continued from Page 62)

motion is slowed almost 14 times. Thus the events that were recorded during one second of exposure take almost 14 seconds to view. This allows detailed analysis of the heart's motion and offers an opportunity to see the relationship between the heart's appearance and the superimposed electrocardiograph tracings.

It is possible, the authors said, to modify the apparatus so that angiocardiograms, phonocardiograms, or ballistocardiograms can be recorded instead of electrocardiograms. It could also be modified to record simultaneously a phonocardiogram and an electrocardiogram.

The procedure may be used to study the effects of a myocardial infarction, and the origin of certain cardiac murmurs, splitting of sounds and gallop rhythms, they said.

Development of more powerful image intensifiers, faster lenses, better cameras and more sensitive film will allow wider use of the procedure, the authors concluded.

The authors are from the Cedars of Lebanon Hospital and the University of California at Los Angeles. The study was aided by grants from the United States Public Health Department and the L. D. Beaumont Trust Fund.

CLASSIFIED ADVERTISEMENTS

(Continued from Page 64)

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
January and his associates¹ have written on the use of tetracycline (ACHROMYCIN) to treat 118 patients having various infections, most of them respiratory, including acute pharyngitis and tonsillitis, otitis media, sinusitis, acute and chronic bronchitis, asthmatic bronchitis, bronchiectasis, bronchial pneumonia, and lobar pneumonia. Response was judged good or satisfactory in more than 84% of the total cases.

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¹January, H. L. et al: Clinical experience with tetracycline. *Antibiotics Annual* 1954-55, p. 625.

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BOOKS RECEIVED

ADVANCES IN INTERNAL MEDICINE—Volume VIII, 1956—William Dock, M.D. and I. Snapper, M.D., Editors. The Year Book Publishers, Inc., Chicago, 1956. 366 pages.

ALCOHOLISM AS A MEDICAL PROBLEM—H. D. Kruse, M.D., Editor. A Conference held under the auspices of the Committee on Public Health of the New York Academy of Medicine and the New York State Mental Health Commission; Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 49 East 33rd Street, New York, 1956. 102 pages, \$3.00.

ANATOMY FOR SURGEONS—Volume 2—The Thorax, Abdomen and Pelvis—W. Henry Hollinshead, Ph.D., Professor of Anatomy, Mayo Foundation, University of Minnesota. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 49 East 33rd St., New York 16, 1956. 934 pages, 1,109 illustrations, \$20.00.

ANNUAL REVIEW OF MEDICINE—Volume 7—1956—David A. Ryland, Editor; and William Creger, Associate Editor, both from Stanford University School of Medicine. Annual Reviews, Inc., Stanford, Calif., 1956. 611 pages, \$7.00.

CARDIAC PRESSURES AND PULSES—A Manual of Right and Left Heart Catheterization—Aldo A. Luisada, M.D., Associate Professor of Medicine; and Chi Kong Liu, M.D., Instructor of Medicine; both of The Chicago Medical School. Grune & Stratton, Inc., New York, 1956. 116 pages, \$6.00.

CHANGING CONCEPTS OF PSYCHOANALYTIC MEDICINE—Proceedings of the Decennial Celebration of the Columbia Psychanalytic Clinic, March 19 and 20, 1955—Edited by Sandor Rado, M.D., D. Pol. Sc., Clinical Professor of Psychiatry; and George E. Daniels, M.D., Clinical Professor of Psychiatry; both of the Columbia University College of Physicians and Surgeons; Grune & Stratton, New York, 1956. 248 pages, \$6.75.

CLINICAL HEMATOLOGY—Fourth Edition, Thoroughly Revised, 236 Illustrations and 20 Plates, 18 in Color—Maxwell M. Wintrobe, M.D., Ph.D., Professor and Head, Department of Medicine and Director Laboratory for the Study of Hereditary and Metabolic Disorders, University of Utah, College of Medicine, Salt Lake City. Lea & Febiger, Philadelphia, 1956. 1184 pages, \$15.00.

CLINICAL STUDIES IN PSYCHIATRY—Harry Stack Sullivan, M. D.—Edited by Helen Swick Perry, Mary Ladd Gawel and Martha Gibbon. W. W. Norton & Company, Inc., New York, 1956. 386 pages, \$5.50.

CLINICAL UROLOGY—Third Edition—Volumes I and II—Oswald Swinney Lowsley, A.B., M.D., F.A.C.S., F.I.C.S., First Director Department of Urology, New York Hospital; and Thomas Joseph Kirwin, M.A., M.S., M.D., F.A.C.S., F.I.C.S., Professor of Urology, New York Medical College. The Williams and Wilkins Company, Baltimore, 1956. 985 pages, 14 pages of index, 599 figures, \$32.50.

CRYPTOCOCCOSIS—Torulosis or European Blastomycosis—M. L. Littman, M.D., Ph.D., Department of Microbiology, the Mount Sinai Hospital; and Lorenz E. Zimmerman, M.D., Central Laboratory, V.A. Armed Forces Institute of Pathology, Washington, D. C. Grune & Stratton, New York, 1956. 205 pages, \$8.50.

DIAGNOSIS AND TREATMENT OF PERIPHERAL VASCULAR DISORDERS—David I. Abramson, M.D., F.A.C.P., Professor and Head of the Department of Physical Medicine and Rehabilitation, and Professor of Medicine, University of Illinois College of Medicine. Paul B. Hoeber, Inc., 49 East 33rd St., New York 16, N. Y., 1956. 537 pages, \$13.50.

DOCTOR'S MARITAL GUIDE FOR PATIENTS, A—Bernard R. Greenblat, B.S., M.D., Associate Attending Physician, Obstetrics & Gynecology, Kings County Hospital, Brooklyn, Clinical Instructor, University of the State of New York, School of Medicine, Brooklyn. The Budlong Press, 5428 N. Virginia Avenue, Chicago 25, 88 pages, patient price, \$1.50. (Also available in a Catholic Edition, 88 pages, patient price, \$1.50.)

(Continued on Page 86)

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Bibliography

1. Anonymous. 2. Rosenthal, P.: Geriatrics 10:382 (August) 1955. 3. Lansing, A. I.: Symposium on Problems of Gerontology, National Symposium Series No. 9 (August) 1954. 4. Mason-Hohl, E.: Quoted in W. Va. Med. J. 51:16 (Janu-

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New Mallet Finger Injury Treatment Described

Baseball players now can go right on playing ball with mallet finger injuries, one doctor says.

A new treatment for the injury—in which the finger is bent at the first joint—allows it to heal without interfering with the use of the hand. The new technique is described in a recent issue of the *Journal of the American Medical Association* by Dr. Francis E. Hillman, Los Angeles.

He said the "crucial" problem in the treatment of mallet finger is immobilizing the end of the finger in an extended position. Older techniques, includ-

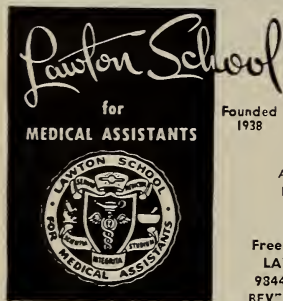
ing plaster casts and splints, have been used with varying success and many disadvantages, including the need for frequent attention, possible infection, and the interference with the hand's use.

His technique, which involves the use of silk thread sewn through the soft tissues of the finger on either side of the bones, keeps the end of the finger rigid while allowing the rest of the finger to move.

A splint may be used for the first day or two to protect the finger from further injury, but later only a simple dressing is needed. This reduces the period of disability to one or two working days.

(Continued on Page 82)

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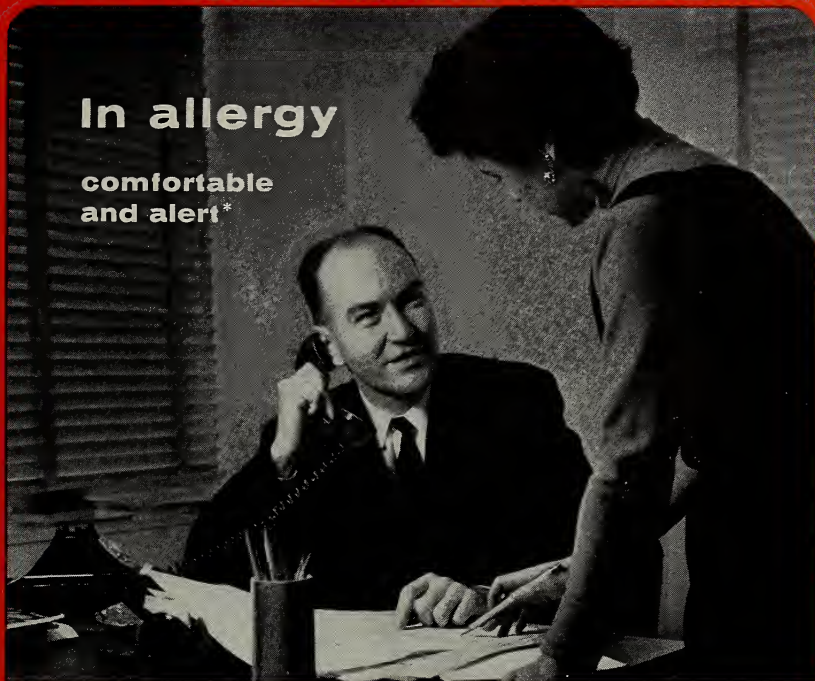
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1. Crip, L. H., and Aaron, T.: J. Pediat. 34:414, 1949.
2. New and Nonofficial Remedies, Philadelphia, J. B. Lippincott Company, 1954, p. 15.
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New Mallet Finger Injury Treatment Described

(Continued from Page 78)

The dressing may be changed whenever needed without disturbing the healing process, since the threads hold the bone in place. On the average the injury is completely healed within four to six weeks. The threads are then removed.

Dr. Hillman has used the new technique in nine cases of mallet finger injury with "consistently excellent" results. He said it is desirable that the fracture be set and the joint immobilized as soon as possible, but results were equally good in four

cases where the patients were first seen six to 18 days after the injury.

The technique has not been tried for mallet finger deformity of long standing, but Dr. Hillman thought it would be useful in such cases. The older the injury, the longer immobilization must be maintained. Since the silk threads do not impede working ability, they could be left in place up to six months, he said.

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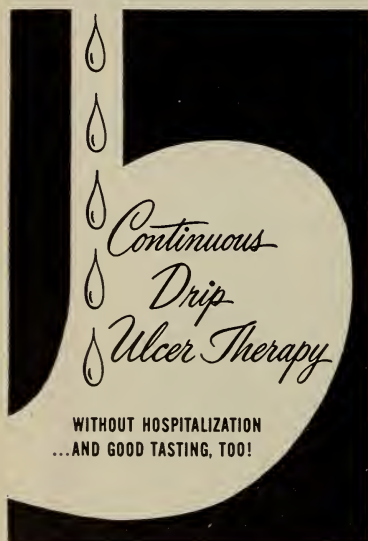
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*Steigmann, F., and Goldberg, E.: Ambulatory Continuous Drip Method in the Treatment of Peptic Ulcer, *Am. J. Digest. Dis.* 22:67 (Mar.) 1955.

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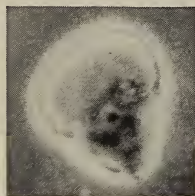
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(Continued from Page 74)

DRUG ADDICT AS A PATIENT, THE—Marie Nyswander, M.D., Senior Supervising Psychiatrist, Post Graduate Center for Psychotherapy, Consultant, New York City Department of Health; President, National Advisory Council on Narcotics. Grune & Stratton, Inc., New York, 1956. 179 pages, \$4.50.

ELECTRODIAGNOSIS AND ELECTROMYOGRAPHY—Some Clinical Applications of Electroneurophysiology—Edited by Sidney Licht, M.D., Honorary Member, British Association of Physical Medicine, Danish Society of Physical Medicine, and the French National Society of Physical Medicine. Elizabeth Licht, Publisher, 360 Fountain Street, New Haven, Conn., 1956. 272 pages, 90 figures, \$10.00.

ENDOGENOUS UVEITIS—Alan C. Woods, M.D., Professor Emeritus of Ophthalmology, Johns Hopkins University School of Medicine, The Williams and Wilkins Company, Baltimore, 1956. 303 pages, \$12.50.

FOLLOW-UP OF WAR NEUROSES, A (January, 1955)—Norman G. Brill, M.D., Professor of Psychiatry and Superintendent and Medical Director, The Neuropsychiatric Institute, University of California at Los Angeles School of Medicine; and Gilbert W. Beebe, Ph.D., Statistician, Follow-up Agency, Division of Medical Sciences, National Research Council, Washington, D. C. V.A. Medical Monograph, Department of Medicine and Surgery, Veterans Administration, Washington, D. C., 1956. 393 pages, can be obtained through the U. S. Government Printing Office, Washington, D. C.

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MANUAL OF PRACTICAL OBSTETRICS, A—Third Edition—The Late O'Donel Browne, M.B., M.A.O., M.A., Litt.D., F.R.C.P.I., F.R.C.O.G., Master, Rotunda Hospital, Dublin—Edited and Largely Rewritten by J. G. Gallagher, M.D., M.A.O., F.R.C.P.I., M.R.C.O.G., John Wright and Sons, Ltd., Bristol, distributed in U.S.A. by Williams and Wilkins Co., Baltimore 2, Maryland, 1956. 265 pages, \$7.50.

MORPHOLOGY OF HUMAN BLOOD CELLS, THE—L. W. Diggs, M.A., M.D., Professor of Medicine and Director of Medical Laboratories, University of Tennessee; Dorothy Strum, Instructor, Memphis Academy of Art; and Ann Bell, B.A., Instructor of Medicine, University of Tennessee. W. B. Saunders Company, Philadelphia, 1956. 181 pages, 31 color plates, 54 figures, \$12.00.

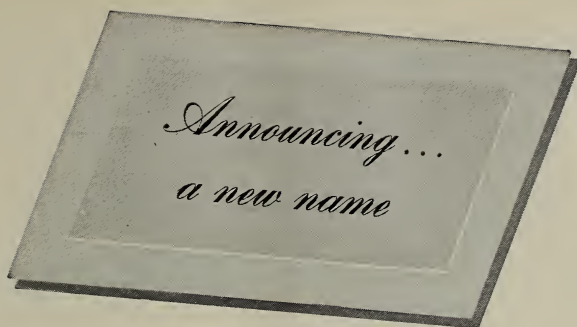
NEW GOULD MEDICAL DICTIONARY—2nd Edition—Edited by Norman L. Hoerr, M.D., Arthur Osol, Ph.D., with 88 contributors. The Blakiston Division, McGraw-Hill Book Company, Inc., New York, 1956. 1,463 pages, \$11.50.

NEW PSYCHOTHERAPY IN SCHIZOPHRENIA, A—Relief of Frustrations by Symbolic Realization—Marguerite Sechehay—Translated by Grace Rubin-Rabson, Ph.D., Grune and Stratton, New York, 1956. 199 pages, \$4.50.

ORAL CANCER AND TUMORS OF THE JAWS—George S. Sharp, M.D., F.A.C.S., F.A.C.R. (Ther.), Professor of Pathology, School of Dentistry, Assistant Clinical Professor of Surgery, School of Medicine; Weldon K. Bullock, M.D., M.Sc. (Path.), Associate Clinical Professor of Pathology, School of Medicine; and John W. Hazlet, D.D.S., Lecturer, Oral Tumor Pathology, School of Dentistry; all from the University of Southern California. The Blakiston Division, McGraw-Hill Book Company, Inc., New York, 1956. 561 pages, \$15.00.

PERSONAL HEALTH RECORD—Carl A. Dragstedt, M.D., Northwestern University Medical School. Military Service Publishing Company, Harrisburg, Pa., 1956. \$1.00.

(Continued on Page 96)



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and who had had no relapses or reinfections. The authors defined course of treatment as "the amount of treatment that was held to be desirable at the time the mother was treated."

A full course of treatment was as effective in preventing infection in the infant when it was given one month before delivery as when it was given 24 months before. Type of treatment, whether arsenical, penicillin, bismuth, or a combination of these, also made no difference in the effectiveness, provided a full course was given.

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(Continued on Page 98)

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VAGINAL TRICHOMONIASIS, common in women, is now recognized as a disease whose causative agent also infects the male. The number of women harboring trichomonads "...has recently been put as high as 24%."¹

Not uncommon in husbands—Evidence shows trichomonads can be found in from 5 to 15 per cent of the male population,^{2,3} or even more. Freed reported that 28.5 per cent of men in his studies were carriers.⁴ In Feo's investigation, "the incidence of non-specific urethritis cases which may be attributable to *Trichomonas vaginalis* was 36.9 per cent."⁵ Karnaky found the parasites in the urethra and prostate or under the prepuce in 38 among 150 husbands with infected wives.⁶

The symptomless vector—"...many patients with trichomonas vaginitis are infected and reinfected by coitus..."⁷ with husbands who may be highly infective without showing clinical symptoms.⁴ Infected wives can in turn re-infect husbands.

Protection against re-infection—To break the cycle of re-infection, authorities agree that the husband should use prophylactics regularly while the wife is under treatment and until it is established that her infection has

cleared—then until he is free from infection.^{2,3,8,9} Karnaky advises a period of as long as four to nine months. By this

time the husband's infection will usually die out of its own accord.⁸ Davis states: "Obviously the man who has a chronic trichomonas infection...will continue to reinfect his wife unless he wears a sheath during coitus."⁹

Prescription of prophylactics—Seek the aid of the husband when you treat the wife. "How The Husband Can Help," a booklet for patients, explains his role in the control of trichomoniasis. Copies are available upon request. Use this booklet to gain his cooperation, make explanations easier, save your time.

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References: 1. McEntegart, M. G.: J. Clin. Path. 5:275 (Aug.) 1952. 2. Draper, J. W.: Internat. Rec. Med. 168:563 (Sept.) 1955. 3. Bernstine, J. B., and Rakoff, A. E.: Vaginal Infections, Infestations and Discharges, New York, The Blakiston Co., 1953. 4. Fred, L. F.: South African M. J. 22:223 (Mar. 27) 1948. 5. Feo, L. G.: Am. J. Trop. Med. 24:195 (May) 1944. 6. Karnaky, K. J.: Urol. & Cutan. Rev. 42:812 (Nov.) 1938. 7. Lanceley, F.: Brit. J. Ven. Dis. 29:213 (Dec.) 1953. 8. Karnaky, K. J.: J.A.M.A. 155:876 (June 26) 1954. 9. Davis, C. H. (Ed.): Gynecology and Obstetrics (revision), Hagerstown, W. F. Prior, 1953, vol. 3, chap. 7, pp. 23-33.

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BOOKS RECEIVED

(Continued from Page 86)

PHYSICAL DIAGNOSIS—Fifth Edition — Ralph H. Major, M.D., Professor of Medicine and of the History of Medicine; and Mahlon H. Delp, M.D., Professor of Medicine; both from the University of Kansas. W. B. Saunders Company, Philadelphia, 1956. 358 pages, 536 figures, \$7.00.

PRACTICE OF PSYCHOSOMATIC MEDICINE, THE—As Illustrated in Allergy—Hyman Miller, M.D., Associate Clinical Professor of Medicine, UCLA School of Medicine; and Dorothy W. Baruch, Ph.D., Consulting Psychologist. The Blakiston Division, McGraw-Hill Book Company, New York, 1956. 196 pages, \$5.00.

PREMARITAL CONSULTATION, THE—A Manual for Physicians—Abraham Stone, M.D., Associate Clinical Professor of Preventive Medicine, New York University College of Medicine, Director, Margaret Sanger Research Bureau; and Lena Levine, M.D., Associate Medical Director, Margaret Sanger Research Bureau. Grune and Stratton, New York, 1956. 90 pages, \$3.00.

PROGRESS IN PSYCHOTHERAPY, 1956—Edited by Frieda Fromm-Reichmann, M.D., Chestnut Lodge, Rockville, Maryland, and Center for Advanced Study in Behavioral Sciences, Stanford, Calif.; and J. L. Moreno, M.D., New York University, New York. Grune & Stratton, New York, 1956. 352 pages, \$8.50.

PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION—Patterns and Techniques—Margaret Knott, B.S., Head Physical Therapist; and Dorothy E. Boss, B.Ed., Assistant Head Physical Therapist, California Rehabilitation Center, Vallejo. Paul B. Hoeber, Inc., 49 East 33rd Street, New York 16, N. Y., 1956. 135 pages, \$5.50.

PSYCHOANALYSIS OF BEHAVIOR—Collected Papers—Sandor Rado, M.D., D.P.Sc., Former Clinical Professor of Psychiatry and Director of the Psychoanalytic Clinic, Columbia University, Grune and Stratton, New York, 1956. 387 pages, \$7.75.

RECOVERY ROOM, THE—Immediate Postoperative Management—Max S. Sadove, M.D., Professor of Surgery (Anesthesia); and James H. Cross, M.D., Clinical Assistant Professor of Surgery; both of the University of Illinois College of Medicine; with contributions by 24 authors. W. B. Saunders Company, Philadelphia, 1956. 597 pages, \$12.00.

TEXT BOOK OF PATHOLOGY, A—8th Edition, Enlarged and Thoroughly Revised with 545 Illustrations and 5 Color Plates—E. T. Bell, M.D., Emeritus Professor of Pathology, University of Minnesota, Minneapolis. Lea & Febiger, Philadelphia, 1956. 1028 pages, \$14.50.

TREATMENT OF THE CHILD IN EMOTIONAL CONFLICT—Hyman S. Lippman, M.D., Director, Amherst H. Wilder Child Guidance Clinic, St. Paul, Minn.; Clinical Professor, Department of Psychiatry and Department of Pediatrics, University of Minnesota Medical School, Minneapolis. The Blakiston Division, McGraw-Hill Book Company, Inc., New York, 1956. 298 pages, \$6.00.

TREATMENT OF HEART DISEASE—A Clinical Physiologic Approach—Harry Gross, M.D., F.A.C.P., and Abraham Jexer, M.D., both assistant Clinical Professors of Medicine, Columbia University College of Physicians and Surgeons. W. B. Saunders Company, Philadelphia, 1956. 549 pages, 91 figures, \$13.00.

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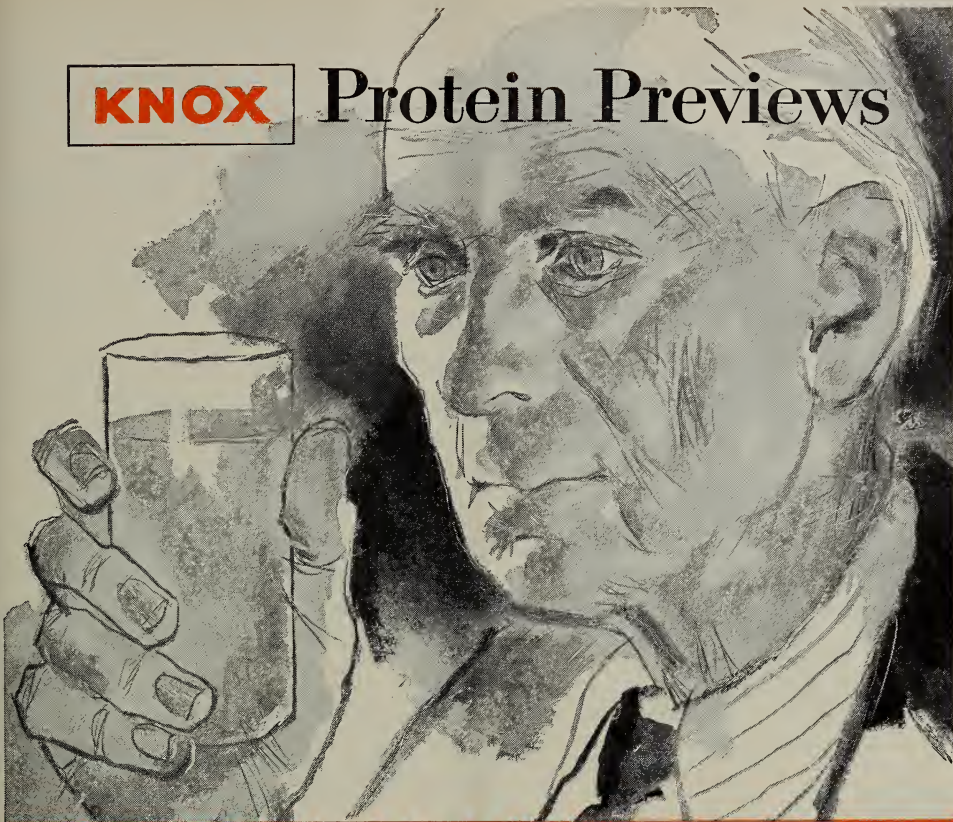
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(Continued from Page 92)

of 13.4 per cent, while among 142 children born to diseased mothers who had had less than one course of treatment, the rate was 5.8 per cent.

Time itself may reduce the occurrence of congenital syphilis in infants of even those syphilitic mothers who have had no treatment for the disease, they said. However, among 130 first-born children of untreated mothers, 21 had congenital syphilis, a rate of 16.2 per cent. There were 252 first-born children in families of mothers who had one or more courses of treatment before any of their

children were born. None of these children had congenital syphilis.

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Dr. Nelson is director of the bureau of venereal diseases and Miss Struve is supervisor of public health nursing of the Baltimore City Health Department.

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West German Medical Education Surveyed

Medical education in West Germany apparently is "moving forward rather brightly" under the present vigorous economy and "peaceful aims" of the country, according to a special report in a recent issue of the *Journal of the American Medical Association*.

Dr. J. Mather Pfeiffenberger, Alton, Ill., and Dr. DeWitt Hendee Smith, Princeton, N. J., said after a tour of German medical schools that teaching methods are changing and there is much construction of new buildings—some of which "would be envied by any medical school . . ."

The general robust economy and contacts between the medical world in Germany and other countries are two major reasons for the change.

American and British physicians in Germany with the armed forces have no doubt contributed to the briskness of contacts with medicine outside Germany, the authors said.

The foreign contacts' influence has helped the trend toward closer student-faculty relations, less authoritarian teaching methods, and more comparison between medicine in Germany and elsewhere, especially in the field of research.

The purpose of the tour was to assess the training of German medical students who later come to the United States for graduate work or to practice medicine.

"We got a fairly good idea of the sort of education a medical student might get if he wanted to but a less clear impression of whether he was assured of getting it," the doctors said.

They concluded that a good student may get an excellent training in Germany if he wants it, but a poor student may slip by the final state examinations with far less education than he could in this country.

One reason the poor student is allowed to get by with so little in Germany is the medical insurance system of the country, they said. Under this system the general practitioner is paid a very small amount. Therefore he cares only for simple things, sending patients to specialists for more complicated treatment. The mediocre German medical student with several years of hospital training may be competent to handle such simple problems as he must face.

However, the recognition of German medical training in the United States remains a vexing problem, they said. A possible solution might be to give credit to German training if accompanied by a high grade in state examinations.

They also found during their tour that:

Research and teaching laboratory facilities were in various states of repair and replacement. The new installations were built "with a sweep and a luxury that the best outside Germany may well envy. The German flare for architecture and design in the nontraditional styles plays a hand here."

(Continued on Page 14)

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West German Medical Education Surveyed

(Continued from Page 10)

Equipment has been more quickly replaced than buildings and is in good supply, including both new German and foreign equipment.

Research of one sort or another was going on not only in the universities but in smaller or remote hospitals.

Where techniques or instruments were not German, there was quick acknowledgement of their sources. The general level of awareness of work going on outside Germany seemed to be high.

There is no attempt to limit the size of medical school classes, even in the face of an admitted surplus of doctors. The surplus, about 10,000 in a total of around 64,000, is mostly accounted for by the immigration from East Germany and would disappear if the partition were ended.

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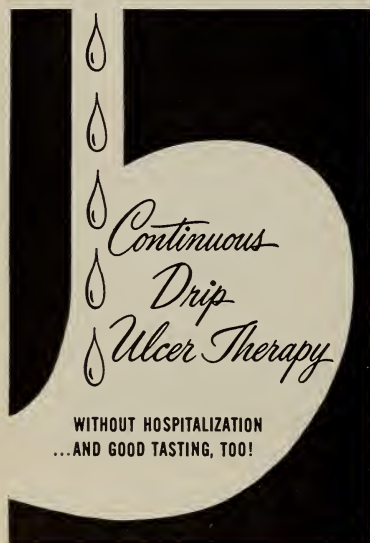
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Principles of Medical Ethics Undergoing Revision

The Principles of Medical Ethics of the American Medical Association, which have served as a guide for physicians for more than a century, are undergoing radical surgery.

The American Medical Association House of Delegates, meeting in Chicago last month, approved a reference committee report on the revision. However, final action was deferred until the clinical session next November in Seattle, "to allow ample opportunity for thorough study" by American Medical Association members.

House action in Chicago followed a report by Dr. Louis A. Buie, Rochester, Minn., chairman of the council on constitution and by-laws, which said "there exists a broad twilight zone in which the concepts of ethics and etiquette are entangled and in which there is much overlapping and consequent confusion."

The report said the present principles are encumbered by confusing "verbosity and qualifying constructions." It was felt that the principles should be broad, providing a framework in which interpretations could be made. They should deal with basic principles which can serve as "a ready reference for the busy practitioner."

The report said: "It is important to understand that medical ethics are not distinct or separate from ethics generally, but simply emphasize those general principles which are of particular concern to the medical profession. The ethical physician will observe all ethical principles because he realizes that they cannot be enforced by penal reprisals, but must be binding in conscience."

The Principles as proposed consist of a brief preamble and ten sections which express the fundamental ethical ideas in the present Principles. Every basic principle has been preserved, but much of the wordiness and ambiguity which made ready explanation difficult have been eliminated. The change would cut the Principles from about 2,500 words to a total of about 400.

The proposed sections follow:

1. The prime objective of the medical profession is to render service to humanity with full respect for both the dignity of man and the rights of patients. Physicians must merit the confidence of those entrusted to their care, rendering to each a full measure of service and devotion.

2. Physicians should strive to improve medical knowledge and skill, and should make available the benefits of their professional attainments.

3. A physician should not base his practice on an exclusive dogma or a sectarian system, nor should he associate voluntarily with those who indulge in such practices.

(Continued on Page 24)

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1. Goodman, L. S., and Gilman, A.: The Pharmacologic Basis of Therapeutics, N. Y., The Macmillan Co., 1955; p. 127.

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Principles of Medical Ethics Undergoing Revision

(Continued from Page 18)

4. The medical profession must be safeguarded against members deficient in moral character and professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession and accept its self-imposed disciplines. They should expose, without hesitation, illegal or unethical conduct of fellow members of the profession.

5. Except in emergencies, a physician may choose whom he will serve. Having undertaken the care of the patient, the physician may not neglect him. Unless he has been discharged, he may discontinue his services only after having given adequate notice. He should not solicit patients.

6. A physician should not dispose of his services under terms or conditions which will interfere with or impair the free and complete exercise of his independent medical judgment and skill or cause deterioration of the quality of medical care.

7. In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him to his patient.

8. A physician should seek consultation in doubtful or difficult cases, upon request or when it appears that the quality of medical service may be enhanced thereby.

9. Confidences entrusted to physicians or deficiencies observed in the disposition or character of patients, during the course of medical attendance, should not be revealed except as required by law or unless it becomes necessary in order to protect the health and welfare of the individual or the community.

10. The responsibilities of the physician extend not only to the individual but also to society and demand his cooperation and participation in activities which have as their objective the improvement of the health and welfare of the individual and the community.

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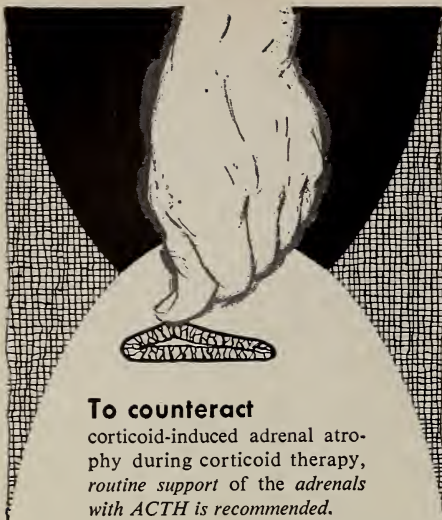
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References: (1) Felix, N. S.: *Pediat. Clin. North America* 3:317, 1956. (2) Joron, G. E.; Fowler, A. F.; de Vries, J.; Reid, G., & Mathews, W. H.: *Canad. M. A. J.* 73:956, 1955. (3) Weil, A. J., & Stempel, B.: *Antibiotic Med.* 1:319, 1955. (4) Perry, R. E., Jr.: *North Carolina M. J.* 16:567, 1955. (5) Jones, C. P.; Carter, B.; Thomas, W. L., & Creadick, R. N.: *Obst. & Gynec.* 5:365, 1955. (6) Murphy, F. D., & Waisbren, B. A., in Murphy, F. D.: *Medical Emergencies: Diagnosis and Treatment*, ed. 5, Philadelphia, F. A. Davis Company, 1955, p. 557. (7) Altemeier, W. A.; Culbertson, W. R.; Sherman, R.; Cole, W.; Elstun, W., & Fultz, C. T.: *J.A.M.A.* 157:305, 1955. (8) Horton, B. F., & Knight, V.: *J. Tennessee M. A.* 48:367, 1955.

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Smoking Test May Reveal Coronary Disease

A laboratory test which measures the effect of cigaret smoking on the heart's pumping action was suggested recently as a possible way of finding otherwise unnoticed heart disease.

Capt. Murray Strober (M.C.), U.S.A.F.R., discussed the ballistocardiograph and Dock cigaret smoking test for diagnosing coronary artery disease in a recent issue of the *Journal of the American Medical Association*. The ballistocardiograph—which measures the impact on the body of the heart's thrust as it pumps blood—frequently indicates heart abnormalities even when other circulatory tests are negative.

Previous studies had shown that smoking before a ballistocardiogram produced nine times as many abnormal results among coronary disease patients as among normal persons.

Capt. Strober said his study, done at the Smoky Hill Air Force Base, Salina, Kansas, confirms the connection between smoking and abnormal ballistocardiograph results. He said there is no clear explanation for this, but there is a definite relation between ballistocardiograph abnormalities and coronary artery disease.

The vast majority of 2,736 airmen had normal tracings after smoking. However, abnormal tracings increased 30 times in persons between 30 and 60 years of age. Abnormal responses showed up in overweight individuals both before and after smoking, and regardless of age.

Not one ballistocardiogram showed any improvement after smoking. Prior to smoking there were 35 abnormal tracings among 2,265. After smoking 85 of 1,725 tracings were abnormal.

The ballistocardiogram has been of value in industrial medicine, he said. Some employers have made this a part of the routine study of employees or those entrusted with tasks where sudden illness might endanger many lives. Part of the reason for the Air Force study was to see if the test could detect asymptomatic coronary disease in persons engaged in the hazardous duties of flying at enormous speeds in high altitudes.

The addition of the Dock cigaret smoking test may make screening surveys more accurate, Capt. Strober said. It is unlikely that the test will detect all cases of asymptomatic coronary disease, but it may find cases that are not detectable by other available means. The ballistocardiogram is not intended to replace a careful physical history, complete physical examination or established methods of cardiac study, he said. Instead the test, which is rapid, efficient and economical, is intended to give the physician additional information about the mechanical pumping action of the heart.

Capt. Strober said that a long-term follow-up study will deal with the men who had abnormal

(Continued on Page 38)



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References. 1. Farah, Luis: Int. Rec. of Med. & Gen. Prac. Clin. 169:379 (June) 1956. 2. Shalowitz, M.: Geriatrics, July, 1956. 3. Robinson, H. M. et al: J.A.M.A. 161:604 (June 16) 1956.

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Job Probation Motivates Alcoholics to Seek Help

A combination of job probation and outside psychiatric help has in the last three years helped one group of alcoholics overcome their drinking problem while remaining on the job.

A report on the Consultation Clinic for Alcoholism, established in 1952 in New York by 14 industrial organizations to help their alcoholic workers, appears in a recent issue of the *Journal of the American Medical Association*.

In its three years of operation the clinic has helped 82 per cent of the 148 alcoholics who accepted treatment remain on the job. In comparison, only half of those who refused treatment kept their jobs. In addition, work absences among the patients dropped by two-thirds after treatment was begun.

Workers are referred to the clinic by their company medical departments, usually after being placed on job probation and told they will lose their jobs if they do not stop drinking.

The probation serves as a strong motivation to seek treatment, the authors said. Motivation is difficult to establish because most of these men have not yet reached the "terminal stage" of alcoholism where they recognize that their jobs and other phases of their lives are seriously disrupted by their drinking.

The threat of job loss was especially great to most of the patients referred to the clinic because they were in the 44-to-63-year age bracket and had held their jobs for many years. The age bracket may be accounted for by the fact that it usually takes 10 to 15 years of drinking before the nature and extent of alcoholism is sufficient to interfere seriously with family, social and vocational life, they said.

Success or failure in treatment depends on motivation and it is "unquestionably" the job probation which turns the balance in favor of seeking treatment, they said.

"Historically, this firm attitude represents a midpoint between the two earlier positions taken toward alcoholics," the authors said. "Initially the attitude was one of harsh, relentless condemnation of the alcoholic as a morally weak person lacking in personal worth and consideration for others, with discharge from his job as the usual consequence. Then the pendulum swung to the other extreme where the alcoholic was regarded as the unfortunate victim of social and psychological pressures against which he was helpless to struggle or change, with repeated episodes of empty promises and drinking relapses as a consequence."

The attitude embodied in the probation procedure recognizes the need for help, but also makes the employee aware that he plays an important part in the rehabilitation process, they said.

(Continued on Page 38)

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Sys., 1:10-15, (January) 1955. 2. Antos, R.J.: Arizona
Med., 11:397-9, (November) 1954. 3. Levy, S.: North-
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Job Probation Motivates Alcoholics to Seek Help

(Continued from Page 34)

The clinic at the University Hospital of the New York University-Bellevue Medical Center is completely independent of its sponsoring organizations. It is staffed by psychiatrists, psychologists and an internist. Treatment consists mainly of individual psychotherapy, group psychotherapy, treatment with drugs such as disulfiram (Antabuse), medical procedures, and in some cases referral to Alcoholics Anonymous. Of the 180 patients referred to the clinic since it opened, 148 have undertaken treatment. Only one patient, with a chronic type of schizophrenia, was considered to be untreatable at

the clinic; one patient was hospitalized and then briefly.

Authors of the report were Arnold Z. Pfeffer, M.D., Daniel J. Feldman, M.D., Charlotte Feibel, John A. Frank, M.D., Marilyn Cohen, B.A., Stanley Berger, Ph.D., M. Freile Fleetwood, M.D.

Smoking Test May Reveal Coronary Disease

(Continued from Page 30)

tracings before smoking and those who responded to smoking. Perhaps in those men who later have acute heart disorders characteristic patterns may be found by reviewing their survey records, he said.

Dr. Strober is now at the State University of New York College of Medicine at New York City.

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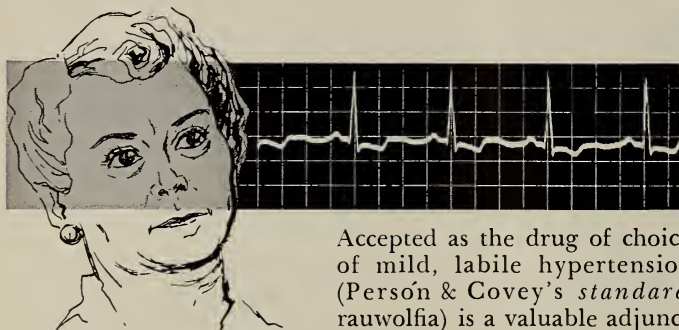
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¹ The New England Journal of Medicine 253:395, September, 1955.

² American Journal of Medical Science 229:379, April, 1955.

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References:

1. Sturgis, C. C., et al.: Advances in Internal Medicine, J. Michigan M. Soc. 55:154 (Feb.) 1956.
2. Moyer, J. H. et al.: Drug Therapy of Hypertension: Preliminary Observations on the Clinical Use of Mecamlamine (A Ganglionic Blocking Agent) in Combination with Rauwolfia for the Treatment of Hypertension, Med. Rec. & Ann. 49:390 (Sept.) 1955.

† In this clinical trial all patients were given, in addition to one of the ganglionic blocking agents, a constant daily amount of reserpine.

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A drug which has been highly successful in curing whipworm infections in dogs has been tried in humans and found wanting.

However, it is hoped further research will reveal ways the drug can be used against whipworm in man, since no other satisfactory treatment has yet been found. Dr. Mark T. Hoekenga, Puerto Armuelles, Panama, said in a recent issue of the *Journal of the American Medical Association*.

He said the intestinal parasite's potential damage

to adults has been underestimated, although it has been agreed that "an overwhelming infection" in an infant may produce diarrhea, intestinal obstruction or emaciation. Milder adult infections may also produce diarrhea. The parasite is a two-inch long, hair-like worm.

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(Continued on Page 50)

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1. Rosenberg, S. and Oster, K. A., "Gelatine in the Treatment of Brittle Nails," *Conn. State Med. J.* 19:171-179, March 1955.
2. Tyson, T. L., *J. Invest. Dermat.* 14:323, May 1950.

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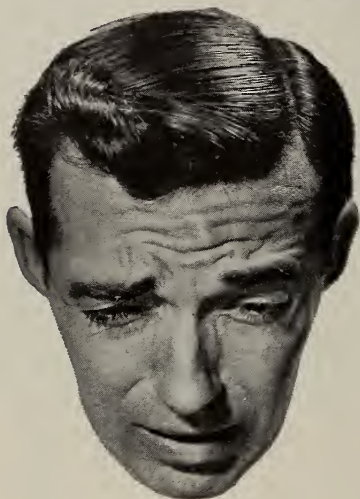
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Two Researchers Outline "Phantom Limb" Theories

Nearly every person who loses an arm or leg experiences the same unusual sensation—that the lost limb is still there.

Scientists, who call this the "phantom limb" phenomenon, have been trying to explain it for a century.

One reason they want to understand phantom limbs is fairly obvious: If they know the cause they may be able to help those who suffer severe pain from them.

But one researcher has an even broader reason; she says she knows of "no other set of facts" that offers so many possibilities for revealing things about why normal bodies feel certain ways. An explanation of phantom limbs, she says, may throw light on the way the body learns to move and develop, on the influence of certain social factors on the body, and on the emotional problems involved in various bodily actions.

She and another researcher gave their theories on the cause of phantom limbs in articles in a recent issue of *Archives of Neurology and Psychiatry*, published by the American Medical Association. The researchers are William B. Haber, New York, and Marianne Simmel, Ph.D., Chicago.

They said the phenomenon has often been thought to be caused by sensations aroused in the stump nerve endings, but they believe something more is involved.

Haber said the phenomenon originates in the central nervous system, which includes the brain and spinal cord. This could be due to either of two things: From birth the central nervous system "expects" certain feelings from the parts of the body, or else it learns to have sensations from the parts of the body and remembers these feelings even after a part is lost.

The similarity of phantom limb sensations in 24 World War II veterans who each lost an arm supports his theory, he said, because it rules out the possibility that phantoms result from unusual conditions in the stump or special conditions before or after amputation. However, there is insufficient evidence now as to whether the phantom sensations depend more on learned or unlearned factors.

Miss Simmel suggested that the phantoms are products of a "time delay" in the body's learning process. Since the brain is "in the habit" of feeling sensations from nerves in the limb, there may be a lag before it learns not to feel them. This could explain why phantoms are common when the limb is lost suddenly, but rare when the loss is gradual as in the absorption process of leprosy. Lepers who have lost parts of limbs, fingers or noses by this absorption feel no phantom. But when leprosy-

damaged parts are removed by surgery, the phantoms appear just as they do among other amputees.

Haber said that all 24 men he studies reported the phantom sensation, with only one calling it painful. Most described the feeling as a mild tingling ("pins and needles," "as if asleep," "vibrating"). The majority felt their phantom now and then; only two felt it constantly and one seldom. Itching was reported by seven men, who felt it strongly enough to scratch nonexistent palms. Throbbing, pulsating, warmth, tenseness, clenching, clutching, gripping and numbness were also reported.

All but two said their phantom had "shrunk" over the years, with some saying the phantom hand had either completely entered the stump or was partly fused with it, so that only portions of the hand were felt to be "protruding." This condition is called telescoping. Following amputation a fading or dropping out of certain parts of the phantom, usually the elbow, forearm or wrist, occurs. The parts which have the greatest use and the most nerves—the fingers, thumb and palm—usually are felt for the longest time.

As the parts drop out, the phantom feels disconnected from the rest of the body, "a disturbing state of affairs," according to Miss Simmel. In order to bridge the gap telescoping occurs, with the phantom part moving toward the stump.

Some men told of illusory movement of the phantom, usually an impulsive reaching toward a falling object. Some also had the feeling of penetrating solid matter. This occurred when solid objects occupied the space which would have been occupied by the limb had it not been lost. Then the phantom limb was felt to be occupying the same space as the solid object. Some also felt imprints of watches or rings worn on the limb before its loss.

Haber found no relation between the characteristics of the phantom and the conditions at the time of loss—either in position of the phantom or in the amount of pain. Neither was there any relation between the wearing of an artificial limb and the dimensions, quality or vividness of the phantom sensations.

Haber concluded that the uniformity of sensations among the men supports, but does not prove, the theory that the phantoms originate in the central nervous system. Studies on the presence or absence of phantoms in children who had amputations at a very early age or were born without a limb, might help determine the role played by learning in causing phantoms, he said.

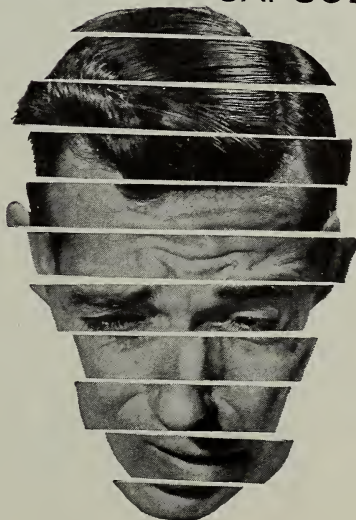
Haber is from the psychophysiological laboratory of New York University-Bellevue Medical Center. Miss Simmel is from the Illinois State Psychopathic Institute and College of Medicine, University of Illinois.

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Research Continues for Whipworm Treatment

(Continued from Page 44)

forming sedative called methylparafynol (Dormison).

When doses large enough to cure were given, severe complications of the eye, nausea, buzzing in the ear and deafness occurred. Of 107 patients receiving a single dose, varying in amount from 100 to 200 mg. per kilogram of body weight, about half were cured. But serious eye complications, including inflammation, pain and light sensitivity, occurred in 16 per cent. Of 36 patients receiving smaller doses, only 22 per cent were apparently cured. Fortunately all the complications cleared within eight days, Dr. Hoekenga said.

A 50 per cent cure rate would be encouraging if there were no adverse side effects, he said. The

severity of the complications prevents the widespread use of the drug among humans. He noted that no eye or ear reactions occurred in any of the hundreds of dogs receiving doses of 250 to 500 mg. However, dogs did become drowsy when given 500 mg. This suggested that the first sign of a toxic reaction in humans would have been drowsiness, but no such drowsiness occurred. These differences in toxicity may be due to breakdown products, with different products occurring in men and dogs, he said.

"Since Whipcide seems so eminently satisfactory in the treatment of dog whipworm diseases, one is reluctant to discard it completely from human trials before exploring all avenues," he said, adding that it may be of value in making heavy infections lighter through repeated small doses.

(Continued on Page 62)



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Physicians Prefer Exclusiveness At American Medical Association Exhibits

A survey just completed by American Medical Association Business Manager Thomas R. Gardiner shows that both exhibitors and physicians favor the new plan of limiting attendance at the American Medical Association technical and scientific exhibits to physicians only during certain periods.

The plan was first tried at the Atlantic City meeting in 1955. Attendance one forenoon was limited to physicians only. At the recent Chicago meeting two forenoons were limited to doctors only. Since then, a number of exhibitors have said that they would prefer to have two full days set aside for doctors only. Others have reported that this is the best single improvement in convention attendance initiated in many years, and hope the plan continues.

Exhibitors say the physicians-only idea gives them a better chance to talk with doctors and also they find that doctors are in a more receptive mood for business conversation.

Mr. Gardiner said that since the Chicago meeting he polled the technical exhibitors, and here are a few of the typical comments:

"We wish to compliment you on your idea to limit two mornings during the week of the American Medical Association show to M.D.'s only. We trust there will be more practices like this in the future."

Another exhibitor from New York said: "Your plan to restrict attendance to physicians only was extremely satisfactory . . . and possibly two complete days could be given over to physicians only. All concerned would benefit from such a plan."

Said a Kansas City exhibitor: "The physicians-only restriction is a big improvement. . . . It is an extremely difficult thing when one is displaying prescription legend items to have all sorts of people stop by requesting a few samples."

An Ohio manufacturer said: "Our comments on your plan are entirely favorable. I was present one of these mornings and felt it very definitely took the carnival atmosphere away for a long enough time to interview physicians on a very high plane."

A Florida orange juice exhibitor said: "I would like to go on record as being in favor of this restriction, and hope that this will continue to be a policy of future American Medical Association meetings."

—A.M.A. Secretary's Letter

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Systemic Manifestations of Erythema Nodosum

CUTTING B. FAVOUR, M.D., Palo Alto

• The systemic manifestations accompanying erythema nodosum can be differentiated from those associated with the precipitating infectious process and from coincident disease processes.

Erythema nodosum itself is characterized by (a) skin lesions at pressure sites, (b) malaise, fever and occasionally chills, (c) arthritis (70 per cent) and (d) over-reactivity of tissue. Tissue hypersensitivity is most pronounced at sites of trauma, at sites of specific skin testing, and in the lymphoid system draining infections in the pharynx and lung.

Common infections of the respiratory tract most often antedate attacks of erythema nodosum. In New England, a β -hemolytic streptococcus infection is a common causative factor, and tuberculosis is an unusual causative factor.

In endemic areas, coccidioidomycosis is a common cause of erythema nodosum.

The most important coincidental disease process is rheumatic heart disease. Rarely is it a sequel of erythema nodosum. Other "collagen diseases" may coexist with erythema nodosum.

Erythema nodosum is its own most common complication. Follow-up studies indicate that over half of the patients have a subsequent attack, and a certain number have recurrent episodes for months to years.

The management of erythema nodosum is expectant. In each case the cause should be found and treated. Steroid treatment is rarely justified, and should be used only after tuberculosis and other treatable entities have been ruled out.

THE COMMON benign form of erythema nodosum is characterized by tender, bruise-like lesions on the shins of a patient who is ambulatory. Much of the knowledge of erythema nodosum, however, has come from studies on the more severe and less frequent variety of this disease which is marked by systemic symptoms and a protracted course. The purpose of this presentation, which is based on observation and review of the records of 163 patients with the disease, is to differentiate the clinical manifestations of erythema nodosum itself from

those arising from coincident or causative underlying processes.

The clinical material used in this study was seen in the medical clinics of the Peter Bent Brigham Hospital, Boston, Massachusetts, and in the author's practice in Boston and in Palo Alto, California.

DIAGNOSIS OF ERYTHEMA NODOSUM

The more severe type of erythema nodosum⁵ is a systemic disorder accompanied by tender, sometimes spontaneously painful, indurated lesions of the skin and subcutaneous tissues. The diagnosis cannot be made from its systemic symptoms, however, without the presence of these lesions somewhere on the cutaneous surfaces of the body. Usually, bilateral lesions resembling bruises are found on the shins.

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Sometimes these are entirely subcutaneous, or are in bizarre locations, such as over the vulnerable pressure prominences of the ankles, knees and elbows, or even on the face and neck. Early lesions may be superficial, hive-like, nonpruritic, erythematous plaques which later become unmistakable erythema nodosum lesions.

Characteristically, nodes occur in successive crops. Usually individual nodes start as indurated subcutaneous nodules which, in the course of one to two days, enlarge to a diameter of 1 to 4 cm. and involve the overlying skin in edema, erythema and, at times, a mild degree of ecchymosis. As they subside during the succeeding days to a week or longer, a fine overlying paper-like scale may develop. Occasionally, frank purpura of the nonthrombocytopenic variety appears either in separate lesions or as a part of erythema nodosum lesions. At the height of the disease, lesions may become confluent, particularly on the parts of the legs that rest against each other during sleep. At this stage of the disease, the most ordinary minor trauma to bony prominences, or even to the soft tissues of the body, may be followed within one to two days by typical lesions. Following recovery, this vulnerability to pressure disappears.

Some difficulties in diagnosis and interpretation have arisen when indurated lesions are persistent. Most often, erythema nodosum is readily distinguished from other nodular processes such as nodular vasculitis, erythema induratum, Schoenlein's purpura and Weber-Christian's syndrome, which also may accompany erythema nodosum. In doubtful cases, biopsy is helpful; but it is not the final court of appeal, since erythema nodosum is a clinical and not a pathological entity.

Usually, lesions of erythema nodosum heal without necrosis or scar formation. Lesions should not be incised as unfortunately has been done all too often. Occasionally, confluent lesions go on to ulceration, not only in persons with ulcerative colitis² but also in persons who have no bowel disorder and no apparent overt causative infectious process.* Rarely, a drug is found to be the cause of erythema nodosum.¹¹ Discovering and discontinuing such an agent is just as important as finding and eradicating the usual infections which precipitate most attacks of erythema nodosum.

SYSTEMIC SYMPTOMS OF ERYTHEMA NODOSUM

Apart from the precipitating causes, erythema nodosum itself can be a severe illness. In addition to the skin lesions, malaise, fever and sometimes chills occur. Usually acute attacks last one to five weeks and subside without residual signs or symptoms. Approximately one patient in ten, however, has an attack that smolders on for months to a year or more^{†15} (Table 1).

Arthritis: Most erythema nodosum patients in this study (70 per cent) had joint manifestation of some type associated with the acute attack (Table 2). In its mildest form, this consisted of arthralgia. In its most obvious form there was acute serous arthritis with redness, heat, swelling and pronounced pain on motion. Chart 1 shows the interval between the onset of arthritis and the development of the lesions which establish the diagnosis. In general, patients with the milder forms of the systemic disease had the worst trouble with their joints, perhaps because they remained on their feet up to the onset of more acute symptoms. Once bedridden, patients had less arthritis. Arthritis occurring late in the acute course of erythema nodosum was less common.

The joints involved most often were the ankles and knees. Arthralgia of the wrists and fingers was surprisingly common in cases in which these symptoms were asked about by the examining physician.

* Observed three times in the 163 patients of this study.

† Observed nine times in the 163 patients of this series. Data given for smoldering or subsequent erythema nodosum is weighted by the fact that the authors' special interest in this disease has resulted in special efforts of physicians and the patients themselves to refer problem illnesses for study.

TABLE 1.—Record of Preexisting or Subsequent Diseases in 90 Patients

	No. Patients
Preexisting rheumatic heart disease.....	11
Subsequent rheumatic heart disease.....	1
Recurrent erythema nodosum.....	9
Preceding or subsequent erythema nodosum.....	57

Duration of follow-up was one year in 13 cases, two to four years in 28 cases, five to 10 years in 30 cases, 10 to 20 years in 11 cases, and 20 to 30 years in 8 cases.

TABLE 2.—Arthritis and Erythema Nodosum

	Records Available	Number Patients	Per Cent of Total	Rheumatic Heart Disease	
				No. Patients	Per Cent
Past history arthritis.....	163	39	24	4	10
Subsequent history arthritis.....	78	18	23	3	17
Arthritis with erythema nodosum.....	137	96	70	9	9.4
No arthritis with erythema nodosum.....	137	40	30	4	10
Rheumatic heart disease present, all patients.....	163	....	....	15*	9.2

* Includes two patients with new rheumatic heart disease with or after erythema nodosum.

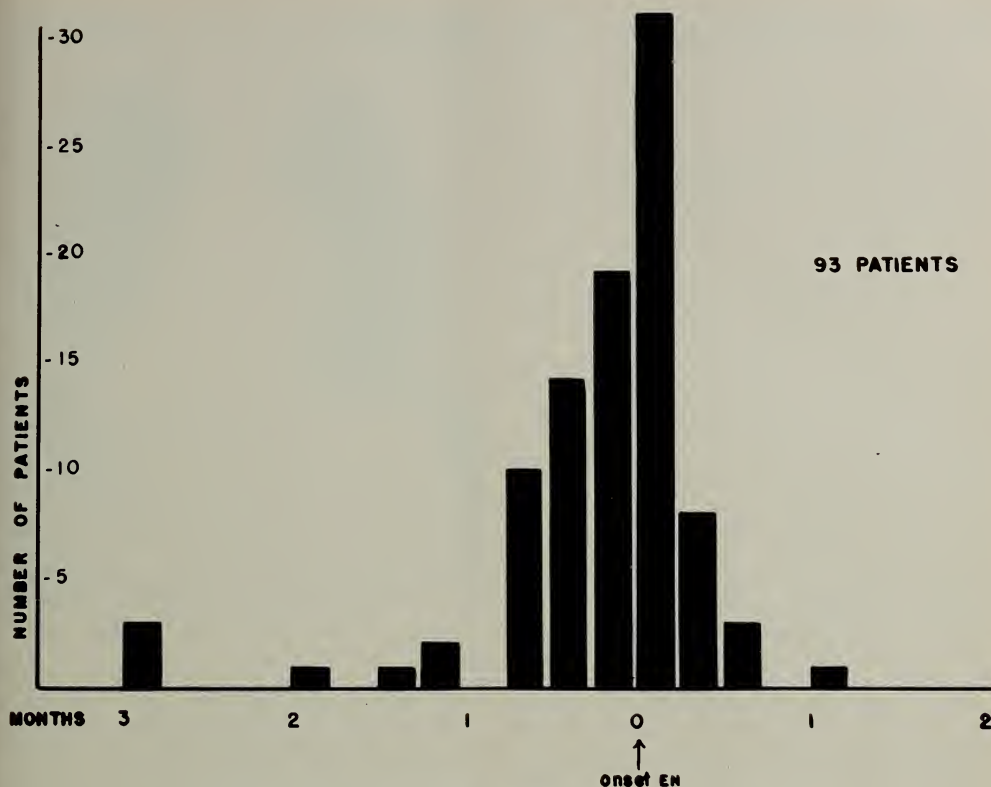


Chart 1.—Interval between onset of arthritis and erythema nodosum.

Objective findings in the no-weight-bearing joints were unusual. Subjective back pain occurred occasionally.

Poncet's arthritis: In 1902, Poncet¹³ described a transient aseptic type of arthritis in patients with tuberculosis which he thought was related to the tuberculous process. Erythema nodosum due to tuberculosis should be an ideal circumstance in which to study this entity. In the present study there were five patients who were proven by the isolation of tubercle bacilli to have active tuberculosis (Table 3). None of the five had arthralgia or arthritis with an episode of associated erythema nodosum. In one of these subgroups of patients, a subsequent attack of erythema nodosum a year later associated with an upper respiratory tract infection was accompanied by mild arthralgia. At that time, studies revealed evidence of a streptococcal and not a tuberculous infection. It is of interest that erythema nodosum ordinarily is associated with arthralgia and arthritis, and yet in all these cases of proven tuberculosis the patients were free of joint symptoms at the time of a known tuberculous infection.

Lungs: Many observers^{5,10,14} have noted pulmonary abnormalities associated with erythema nodosum. Patients with these changes have a mild to severe harassing dry cough (Table 4). The most characteristic pulmonary finding is hilar adenopathy, with or without increased lung marking or mottling of the lungs. A perihilar clear zone separating the node from the mediastinum structures (Figure 1) has been noted often enough in this

TABLE 3.—Tuberculosis and Erythema Nodosum

	Records Available	Tuberculosis	
		No. Patients	Per Cent
Family history tuberculosis.....	163	12	7.3
Past history clinical tuberculosis..	163	7	4.3
Past exposure to tuberculosis.....	163	4	2.4
Proven tuberculosis with erythema nodosum	163	5	3.0
Tuberculin tests (purified protein derivatives)	53	....	....
First strength positive.....	9		
Second strength positive....	13		
Second strength negative....	31		

TABLE 4.—Roentgenologic Findings in the Chest in 93 Patients with Erythema Nodosum

	No. Cases
Entirely negative	57
Increased root markings.....	10
Enlarged lymph nodes.....	12
Enlarged lymph nodes with mottling in the lung fields	6
Mottling of the lungs.....	2
Apical infiltrations	5
Inactive tuberculosis	4
Active tuberculosis	1
Total	93

disease and not in other conditions, to suggest that this is a presumptive diagnostic finding. In none of the patients in the present series were these pulmonary patterns found to be due to tuberculosis. Of parenchymal lesions found in the upper lung fields only, four were inactive and one was active apical tuberculosis.

The changes in peripheral lung fields that have been seen by the author, clear within one to three weeks. Hilar nodes may persist for one to four months. In some series of patients, one or another of these pulmonary patterns has been found to be due to a recognizable infection which itself is the cause of the erythema nodosum. In the Scandinavian countries where tuberculosis is still prevalent, tubercle bacilli have been obtained from the sputum or gastric washing in a number of these persons. In the San Joaquin Valley in California, evidence of a concurrent coccidioidomycosis infection is a common finding. In New England, benign bronchitis is the most commonly recognized cause of pulmonary findings.

Pulmonary changes seem to be, in part, a manifestation of erythema nodosum itself. The peripheral infiltrations of the lung fields undoubtedly represent a local infection and the hilar nodes represent a secondary regional adenitis. The most interesting feature of these changes is the relatively mild degree of bronchitis or pneumonitis which brings about the central adenitis and systemic symptoms. In the same way, simple tonsillitis may be accompanied by a more obvious satellite cervical adenitis, the two changes together precipitating striking systemic manifestations. These effects seem to be a part of a general tissue over-reactivity which contributes to skin and joint changes as well. Tuberculin tests³ or streptococcus skin tests⁴ during the active phase of the disease will also provoke clinical exacerbations, whereas they do not do so at other times in these patients.

Laboratory findings: Transient, slight albuminuria may occur at the height of an attack. Where acute infection does not complicate erythema nodosum, the changes in the blood are minimal. In



Figure 1.—Hilar adenopathy associated with erythema nodosum.

some patients with high fever and a protracted course, mild anemia develops. The number of leukocytes may be elevated—from 12,000 to 25,000 in a severely ill patient—with a shift to the younger forms. Normal or low leukocyte counts may be seen where there is an accompanying virus infection. The sedimentation rate may be elevated, depending on the intensity of the disease.

Total proteins: Total serum proteins are usually within the normal range. Occasionally an elevated globulin value is encountered much as in other systemic disorders that run a protracted course.

Electrocardiograms: Erythema nodosum does not cause alterations in the electrocardiographic tracings.

Bacteriology: In this study (Table 5) β -hemolytic streptococci were recovered from the pharynx in 20 of 48 cases in which cultures were made one or more times, and once from the antrum, once from a retained tooth fragment, and once from a tooth socket after dental extraction for an abscessed tooth. In the last three instances, throat cultures contained no β -hemolytic streptococci. No β -hemolytic streptococci were recovered from eight additional patients who had received an antibiotic just prior to study. The importance of the β -hemolytic streptococci in the northeast part of the United States where this study was done is abundantly apparent.

TABLE 5.—Beta-Hemolytic Streptococci Associated with Erythema Nodosum	
	No. Patients
Beta-hemolytic streptococci recovered.....	23
Pharynx	20
Antrum	1
Retained tooth fragment.....	1
Tooth socket	1
	23
No Beta-hemolytic streptococci recovered:	
Pharynx	25
Skin tests with Beta-hemolytic streptococcus vaccine:	
Positive	59
Negative	3

Skin tests: Emphasis on tuberculosis as a cause of erythema nodosum has resulted in a considerable body of uncritical misinformation on this subject. Table 3 gives the results of tuberculin tests on a group of patients with the more severe forms of erythema nodosum. It is seen that positive reaction to tuberculin tests is not the rule.

Beta-hemolytic streptococcus skin tests (Table 5) may even precipitate new crops of erythema nodosum⁵ just as tuberculin skin tests have been reported to do in the past.⁴ This occurred in 7 of 59 patients with positive streptococcus reactions and did not occur where other skin tests were done. It did not occur in association with tuberculin testing. Skin tests have been of value in one other respect: The lack of anergy in patients with erythema nodosum is looked upon by the author as evidence that erythema nodosum is unrelated to sarcoid. Contrary claims by other investigators⁸ have not been substantiated in the present series or other large series of reported cases.^{15,9}

Rheumatic fever: The common occurrence of joint manifestation in erythema nodosum has led to much confusion in the relation between rheumatic fever and erythema nodosum. The frequent presence of a streptococcus infection antedating erythema nodosum has added to this confusion.^{16,6,12} Furthermore, it is known that a certain number of persons in whom erythema nodosum develops also have rheumatic heart disease. Table 6 shows the incidence of rheumatic heart disease in a group of patients with erythema nodosum. The coincidence of erythema nodosum and rheumatic heart disease is greater than that expected in a random sampling of the population. To an extent, this might be expected in a region where a streptococcus as an etiologic factor is common.

When a family history of rheumatic heart disease is carefully sought, it is found (Table 6) that patients with erythema nodosum alone have the expected low incidence of rheumatic heart disease history and that those with both erythema nodosum

TABLE 6.—Relationship of Coincidence of Rheumatic Heart Disease and Erythema Nodosum to Family History of Rheumatic Fever			
	No. of Records Available	No. of Patients	Per Cent
Family history of rheumatic fever*:			
Patients with preexisting rheumatic heart disease	11	4	36.0
Patients with no rheumatic heart disease	152	10	1.5
Carditis with erythema nodosum	163	1	0.6

*Rheumatic fever = Rheumatic heart disease, six patients; chorea, one patient; acute rheumatic fever, one patient.

and rheumatic heart disease have the expected high incidence of a family history of rheumatic heart disease. In only one patient in the series did rheumatic heart disease develop subsequent to erythema nodosum and in one patient acute carditis developed coincident with erythema nodosum (Table 6). All the other patients with erythema nodosum and rheumatic heart disease were known to have heart disease before the first attack of erythema nodosum.

This situation may be summarized by saying that both erythema nodosum and rheumatic heart disease can appear in the same person who has the hereditary background of susceptibility. Rarely do they appear simultaneously. Unlike rheumatic fever, which is initiated by β -hemolytic streptococcus infection only, erythema nodosum may be set off by many infectious processes.

Follow-up examination: Table 1 gives data on follow-up studies. Combining this data with data on a past history of other attacks of erythema nodosum, it is found that, of 90 patients followed for a year or longer, 57 had more than one episode and 9 unfortunately had a chronic relapsing form of erythema nodosum.

The best single clue to the relation between erythema nodosum and rheumatic heart disease is to be found in follow-up studies. In persons (65 per cent) with joint pains and fever who develop proved rheumatic heart disease, murmurs and evidence of cardiac involvement will develop usually within one year,⁷ and almost always within five years.¹ Only one patient in the present series who did not have rheumatic heart disease at the time of erythema nodosum developed subsequent rheumatic heart disease.

Subsequent roentgenological examinations of the chest (Table 1) gave no further evidence of tuberculosis as the cause of erythema nodosum in patients not known to have tuberculosis at the time erythema nodosum developed.

Treatment of erythema nodosum with systemic manifestations: Many patients with erythema no-

dosum will recover without event if given only bed rest and symptomatic therapy. This management is recommended as the standard form of treatment.

During this treatment, diligent efforts should be made to determine the infectious or the chemical allergen causing the disease. The only specific treatment for erythema nodosum is specific removal of such a cause.

The most important etiologic factor to rule out is tuberculosis. When found, it should be treated according to accepted principles and the erythema nodosum treated with appropriate symptomatic management.

When evidence of a β -hemolytic streptococcus infection is found, penicillin should be given parenterally for from ten days to two weeks. This will not alter the speed of normal recovery but may be helpful in shortening a protracted course of erythema nodosum.

When there is evidence that an infected tooth or infected tonsils are at fault, antibiotic therapy alone is not enough. The infected focus should be removed surgically after a period of antibiotic treatment. Erythema nodosum complicating ulcerative colitis or regional ileitis may improve on antibiotic, dietary, and other treatment. When it does not, it is ominous and portends the need for surgical resection.

Only rarely will there be occasion to use cortisone derivatives or corticotropin (ACTH) for excruciatingly painful smoldering erythema nodosum or for long-standing erythema nodosum which is causing so much arthritis that the patient cannot remain gainfully employed. This treatment should be reserved for patients in whom tuberculosis is not a cause and for those on whom careful observation has shown that a specific treatment for a known cause cannot be used instead.

300 Homer Avenue, Palo Alto.

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Adrenalectomy for Control of Cancer of the Breast

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BENJAMIN SIMKIN, M.D., HENRY L. JAFFE, M.D., and
NATHAN FRIEDMAN, M.D., Los Angeles

A TEAM OF SPECIALISTS composed of two surgeons, an endocrinologist, a therapeutic radiologist and a pathologist have been working together at the Cedars of Lebanon Hospital in Los Angeles for the purpose of treating a group of patients with advanced metastatic cancer of the breast. The treatment consists of the surgical removal of the ovaries and the adrenal glands.

This cooperative therapeutic endeavor was stimulated by the reports of Huggins^{4,5} who first introduced this form of treatment. Subsequent published reports by other groups also noted that favorable palliative results could be obtained in some of the patients subjected to total adrenalectomy.^{3,6-10,13-15}

This report summarizes the experience with, and program of management of, ten patients with advanced metastatic cancer of the breast treated by bilateral oophorectomy and adrenalectomy and who have now been observed for one year or longer.

CONDITION OF PATIENTS

Combined oophorectomy and adrenalectomy was performed in ten patients with metastatic carcinoma of the breast. All had metastasis to soft tissue and/or bone of significant clinical degree associated with active progressive symptoms due to the metastatic lesions. In every case, the metastatic lesions could be objectively demonstrated. There was no selection as to age, pathological type of tumor, type of metastasis or previous therapy. Eight of the ten patients had had varying amounts of hormonal and x-ray therapy previously, despite which the disease was still progressing. None of the patients had had surgical oophorectomy. Two of the patients had no previous palliative therapy for the metastatic disease.

PREOPERATIVE MANAGEMENT

1. Preoperative Studies

(a) *Routine tests normally obtained before any type of elective surgical procedure.* These tests in-

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Submitted March 14, 1956.

• Bilateral oophorectomy and adrenalectomy were used in the treatment of ten patients with advanced metastatic carcinoma of the breast, and particular attention was given to preoperative and postoperative management by a team of specialists including surgeons, endocrinologist, radiologist and pathologist.

Objective and gratifying clinical remissions were achieved in three of the ten patients in this series following total oophorectomy and adrenalectomy. The remaining seven patients all subsequently died of metastatic disease. There were no operative deaths.

Known cerebral or hepatic metastasis contraindicates adrenalectomy for metastatic cancer of the breast. Five of the seven patients not benefited by the operation had either cerebral or hepatic metastasis.

The best candidates for adrenalectomy are premenopausal women who have previously had a clinical remission following oophorectomy and who have subsequently relapsed.

The indications for adrenalectomy in the postmenopausal woman are not clear.

clude urinalysis, complete blood cell count, platelet count, blood typing and serum creatinine determination. In the event of known or suspected cardiovascular disease, an electrocardiograph and a 6-foot film of the chest for heart size were also obtained.

(b) *Serum electrolytes.* Serum sodium, potassium, chloride and carbon dioxide combining power determinations were done. These served as a baseline for postoperative serum electrolyte determinations, helpful in adjusting postoperative adrenal replacement therapy.

(c) *Tests of calcium metabolism* (particularly in patients with osseous metastasis). These studies served as preoperative baseline values for subsequent postoperative determinations. These tests are an aid in the evaluation of the growth activity of osseous metastasis before and after adrenalectomy.^{7,8}

(1) Serum calcium.

(2) Serum phosphorus.

(3) Serum alkaline phosphatase.

(4) Quantitative 24-hour urine excretion of calcium on the third day of a low calcium (100 mg.) diet.

(d) *Hormonal studies.* The only hormonal study

done routinely was determination of the 24-hour urine excretion of *total estrogens*. This was repeated two or three months after operation to determine the effect of adrenalectomy on estrogen production.¹ Preoperative tests of adrenal cortical function were not routinely done because it was felt they did not contribute to the practical management of the patients. All patients were routinely protected against operative and postoperative adrenal insufficiency by a standard schedule of adrenal cortical replacement therapy.

(e) *X-ray studies*. Bone surveys and films of the chest for the detection of metastatic lesions were obtained.

2. Preoperative Adrenal Cortical Preparation

Nine of the ten patients had two-stage adrenalectomy. Adrenal cortical replacement therapy was done routinely before the first stage of the adrenalectomy. This was done for the following reasons: (1) What the functional capacity of the remaining adrenal gland will be after unilateral adrenalectomy cannot be forecast accurately before operation; (2) The adrenal glands of patients with advanced carcinoma may already be subjected to stress prior to operation;¹⁶ (3) Unsuspected metastatic carcinoma in the adrenal glands was discovered in a high proportion of the patients in this series.

Because of these factors, it was felt that it is easier and safer to protect the patient against possible operative or postoperative adrenal cortical insufficiency than to treat adrenal collapse when it occurs.

The following treatment schedule was followed:

Cortisone acetate: Two days before operation—50 mg. intramuscularly every 12 hours. One day before operation—50 mg. intramuscularly four times a day. Two hours before operation—150 mg. intramuscularly.

(Note: Desoxycorticosterone acetate (DOCA) and sodium chloride were used preoperatively in only two cases, early in the series. In those two cases these agents were used as recommended by Huggins and postoperative peripheral and pulmonary edema was a problem. In the subsequent patients these substances were not given and this complication did not occur.)

SURGICAL TECHNIQUE

In all but one case in this series the operation was done in two stages: Bilateral oophorectomy and left adrenalectomy in the first stage, and right adrenalectomy a week or ten days later. In one instance the entire procedure was done in one stage. It is felt that when the patient is in reasonably good condition the one-stage procedure can be done safely.

Oophorectomy is done through a suprapubic midline incision. The patient is then placed on her right side in a "kidney position," and the left adrenal gland is removed through an incision going through the bed of the 12th rib. The lumbar muscles are divided in the line of the incision, Gerota's fascia is incised, the kidney is drawn downward and the adrenal gland exposed. Because the gland is extremely friable, clamps should be applied to surrounding adventitious tissue rather than to the gland itself in providing traction for exposing the adrenal artery and veins. On the right side the upper pole of the gland must be separated from the posterior surface of the liver, and the deep surface must be carefully dissected from the vena cava.

OPERATIVE MANAGEMENT

The preoperative preparation with cortisone given intramuscularly was frequently sufficient to carry the patient through the surgical procedures without incident or need of further steroid therapy. However, the following materials* were always on hand in the operating room in case of sudden need: (1) Hydrocortisone for intravenous use, (2) aqueous adrenal cortical extract, and (3) levarterenol bitartrate (Levophed®). The intravenous hydrocortisone was always set up and ready for infusion in the event of the following indications: (1) Significant persistent decrease in blood pressure, and (2) a pulse rate of 120 or more. It was found necessary to supplement the cortisone maintenance of the patient with intravenous hydrocortisone in about one-third of the cases. Aqueous adrenal cortical extract was used in two patients because of a precipitous drop in blood pressure and it restored the pressure to normal levels while the drip of intravenous hydrocortisone was being started. In the series no occasion arose for the use of Levophed.

POSTOPERATIVE MANAGEMENT

The following regimen was the basic postoperative routine (modified, of course, to suit each patient's individual requirements and problems):

Day of operation: Cortisone acetate, 50 mg. intramuscularly every 4 to 6 hours. 1,500 cc. of 5 per cent glucose in distilled water intravenously. Fluids by mouth as tolerated.

First postoperative day: Cortisone acetate, 50 mg. intramuscularly every 6 hours. 1,000 cc. of 5 per cent glucose in distilled water intravenously. Fluids by mouth and soft diet as tolerated.

Second postoperative day: Cortisone acetate, 50

* Merck & Co. supplied a saline suspension of cortisone acetate for intramuscular use and infusion concentrate of hydrocortisone for intravenous administration; and Parke, Davis & Co. supplied aqueous adrenal cortical extract (Eschatin).

TABLE 1.—Results of Bilateral Oophorectomy and Adrenalectomy for Metastatic Carcinoma of the Breast

Patient	Age	Time of Radical Mastectomy Before Adrenalectomy	Time of Appearance of Distant Metastasis Before Adrenalectomy	Hepatic or Cerebral Metastasis	Previous Treatment	Response to Objective	Adrenalectomy Subjective	Final Status 1 Year After Adrenalectomy
1.	36	4 years	2½ year S 16 months B	+ C	XR 1950 Cast XR 1953 Testost. 1953	0	+ for 5 mos.	Died 7 months postoperatively
2.	49	3 years	3 months S	0	0	+	+	Still in remission 12 months postoperatively
3.	41	4 years	2 months S	0	PO XR	+	+	Still in remission 12 months postoperatively
4.	39	1 year	2 months S B	+ H	PO XR Cast XR Testost.	0	0	Died 10 months postoperatively
5.	47	5 years	2 years S B	0	Cast XR Testost. Cr PO ₄	+	+	Still in remission 12 months postoperatively
6.	40	5 years	2 years S	+ C	Cast XR PO XR Testost.	0	0	Died 6 weeks post-operatively of cerebral metastasis
7.	56	5 years	3 years S B	0	XR Testost. XR PO	0	+ for 4 mos.	Died 11 months postoperatively
8.	48	4 years	2 years S	+ C	Estrogens XR Cortisone	0	0	Died 6 weeks post-operatively of cerebral metastasis
9.	73	2 years	2 months S	0	Cr PO ₄	0	0	Died 3 months postoperatively
10.	49	3 years	1 year B S	+ H	XR PO XR Testost.	+ for 5 mos.	+ for 5 mos.	Died 7 months postoperatively

Legend: S—Soft tissue metastasis.
B—Bone metastasis.
C—Cerebral metastasis.
H—Hepatic metastasis.
XR—Radiation therapy.
PO XR—Postoperative radiation therapy.
Cast XR—Castration by radiation therapy.
Cr PO₄—Intrapleural radioactive chromic phosphate therapy.

mg. intramuscularly every 8 hours. Soft diet and fluids by mouth as tolerated. No parenteral fluids unless oral intake inadequate.

Third postoperative day: Cortisone acetate, 50 mg. intramuscularly every 12 hours.

Fourth postoperative day: Cortisone acetate, 37.5 mg. intramuscularly every 12 hours.

Fifth postoperative day: (1) If the patient has had only a first stage adrenalectomy and is to be prepared for removal of the second adrenal gland, the preoperative hormonal preparation is exactly as outlined above under *Preoperative Management*, beginning on this day. (2) If the patient has had bilateral adrenalectomy in one stage or a second stage adrenalectomy, administration of cortisone by mouth is begun on this day. The dose is 12.5 mg. four times a day. The patient is maintained on this dose until discharge from the hospital.

The Use of DOCA and Sodium Chloride

The need for supplementary sodium chloride is gauged by such factors as daily serum electrolyte

determinations, urinary output, presence or absence of edema, and the age and cardiac status of the patient. The daily dose of sodium chloride given varies from 1 to 4 gm., preferably by oral administration. If parenteral salt is needed during the first or second postoperative day, it is given in the form of 0.45 per cent normal saline solution.

DOCA was not given in this series until the maintenance oral dose of cortisone was begun on the fifth postoperative day or later. Usually at this time DOCA was given sublingually, 2 mg. daily.

Maintenance Hormonal Management After Discharge from the Hospital

All of the patients were satisfactorily maintained on cortisone, 50 mg. daily by mouth, given in divided doses, and sublingual DOCA, 2 mg. daily. Most patients did not require supplemental doses of sodium chloride but a few were given 2 to 4 gm. of salt per day. All the patients were instructed to notify the endocrinologist of the group immediately if they had a respiratory tract infection or febrile

RESULTS

1. Operative Mortality and Morbidity

Nineteen operations were done on ten patients. There were no operative or postoperative deaths. There were two postoperative complications. In one patient, the oldest in the series, a 73-year-old woman, bilateral wound infection developed in the adrenalectomy incisions. The other complication, in another patient, was slight pneumothorax due to a pleural tear with an estimated 10 per cent collapse of the lung on the involved side.

2. Subsequent Clinical Results

One year after operation three of the ten patients remained in complete objective and subjective remission and seven had died of metastatic disease. The salient data concerning these patients are summarized in Table 1.

The following summaries illustrate the clinical course of the three patients who had excellent remission following combined oophorectomy and adrenalectomy.

CASE 1. A 49-year-old white woman had a right-radical mastectomy for carcinoma of the breast in July 1951. She was well until March 1954 when progressive shortness of breath developed due to bilateral pleural effusions. She required thoracentesis four times prior to adrenalectomy. Pathological examination of the pleural fluid showed the presence of carcinoma cells. X-ray studies showed a massive pleural effusion on the right with a small amount of fluid in the left pleural cavity (Figure 1). A bone survey showed no abnormality. Bilateral oophorectomy and adrenalectomy was done in July 1954. Following operation there was a prompt disappearance of the pleural effusions. The patient returned to full activity and at last report was managing her business without assistance. She said she felt "wonderful." An x-ray film of the chest in April 1955 was normal except for evidence of thickening of the basal pleura on the right (Figure 2).

CASE 2. A 41-year-old white woman had a right radical mastectomy for carcinoma of the breast in December 1950. She was well until April 1954 when aching pains developed in the left shoulder and chest, and shortness of breath was noticed. Examination revealed a bilateral pleural effusion and a metastatic right supraclavicular lymph node. No abnormality was seen in an x-ray study of the bones. The metastatic lymph node was removed and pathological examination revealed carcinoma. Pathological examination of pleural fluid also revealed the presence of carcinoma cells. Bilateral oophorectomy and adrenalectomy was performed in June 1954. There was prompt disappearance of the pleural effusions and pulmonary nodules. In December 1954 a recurrence of right pleural effusion developed. A single treatment with the pleural instilla-



Figure 1.—Preoperative x-ray film of chest (Case 1). Note large pleural effusion on the right.

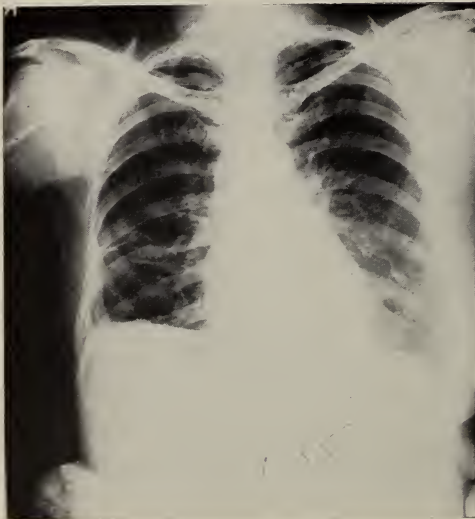


Figure 2.—X-ray film of chest (Case 1) nine months after bilateral oophorectomy and adrenalectomy. Note resolution of right pleural effusion. Only thickening of the basal pleura on the right remains.

illness of any sort, any injuries, any contemplated major or minor surgical procedure, or such symptoms as malaise, anorexia and nausea. This was for the purpose of possible immediate adjustment of replacement hormonal therapy to avoid acute adrenal insufficiency secondary to stress.

tion of radioactive chromic phosphate resulted in prompt clearing of the effusion. The patient was well and free of any objective metastatic disease 13 months after operation. An x-ray film of the chest in June 1955 was normal except for some thickening of the right pleura at the costophrenic angle.

CASE 3. A 47-year-old white woman had a right radical mastectomy in 1949. She received postoperative x-ray therapy because of metastasis to the axillary lymph nodes. In February 1952 bilateral pleural effusions developed. At this time treatment consisted of irradiation of the ovaries, bilateral intrapleural instillation of radioactive chromic phosphate, and the intramuscular administration of testosterone. These measures resulted in improvement in the pulmonary metastatic disease. However, progressive metastatic involvement of the bones developed, with generalized pain, malaise, fatigue and semi-invalidism. X-ray studies in July 1954 showed multiple osteoblastic metastasis involving the entire spine, pelvis, upper femurs, skull and ribs. Bilateral oophorectomy and adrenalectomy were performed in July 1954. The patient returned to full activity, had no pain or symptoms of any kind and "feels wonderful." She was clinically well 12 months after operation.

3. Comments on Treatment Failures

When this study was begun the authors did not realize the hopeless prognosis for patients with hepatic or cerebral metastasis regardless of the mode of treatment. Five of the seven patients in this series in whom treatment failed had either hepatic or cerebral metastasis. Three of these patients had cerebral metastasis, and in only one of the three cases was this fact known prior to the combined operative procedure. The cerebral involvement in the other two patients did not become apparent until, after operation, it was manifest by the clinical development and progression of neurological signs and symptoms. The two patients with hepatic metastasis were found to have liver involvement at the time of laparotomy for oophorectomy.

In most instances the ultimate response of the disease to the operation was apparent by the time the patient left the hospital. At this time the patients were receiving adrenal replacement maintenance doses of cortisone and DOCA and the temporary beneficial effects of large doses of cortisone had ended. Those who were to benefit by the operation felt well on maintenance doses of cortisone and as time went on continued to feel better and better. On the other hand, those who did not benefit from the operation did not feel well on maintenance adrenal replacement medication, and adjustments in adrenal replacement medications did not help. However, two of the seven patients in whom the treatment was a failure had temporary periods of im-

provement before relapsing and eventually dying of the disease. One of these patients had an impressive subjective response for a period of four months after operation, during which time she felt very well despite the objective evidence of spread of the disease. The case history is as follows:

A 56-year-old white woman had right radical mastectomy in 1949. Early in 1952 a sternal mass first appeared. Despite an intensive course of irradiation and a full course of testosterone therapy there was no regression in the sternal mass. Moreover, metastatic involvement of the sternum and the lungs became evident. Consequently bilateral total oophorectomy and adrenalectomy was performed and completed in August 1954. Following the operation the patient subjectively felt well and stated she felt wonderful. She had no pain or distress of any kind, had a hearty appetite and was able to perform all of her customary duties. She felt so well she was able to take a trip by herself to the East Coast to see her family for a period of five weeks. There were, however, no objective changes in the sternal mass or in the x-ray appearance of the metastatic lesions in the sternum and the lungs. The subjective sense of well-being ended approximately four months postoperatively when the patient began to complain of pain across the chest, cough, weakness and malaise. At this point a course of cobalt treatments was directed at the sternal mass, which definitely flattened and seemed to melt away. However, the pulmonary metastatic lesions were increasing in size and number despite the cobalt therapy. Subsequently the patient developed progressive shortness of breath due to rapidly progressive metastatic disease of the lungs, and 11 months after operation she died of metastatic pulmonary disease.

This patient differed from all the other patients who were unresponsive to operation in that she felt subjectively very well postoperatively on just maintenance doses of cortisone.

One patient had a partial response to operation, as objectively viewed, for a period of four months:

A 49-year-old white woman had a right radical mastectomy in 1951. In 1953 pain in the back due to vertebral metastasis developed. At this time treatment consisted of x-ray castration, radioactive phosphorus and a full course of testosterone therapy. Despite this therapy the patient ultimately developed massive bilateral pleural effusions which were recurrent and required thoracentesis several times. Because of this, bilateral oophorectomy and adrenalectomy were done in November 1954. During the laparotomy for oophorectomy a large metastatic nodule was found in the right lobe of the liver. Following operation the pleural effusions did not recur and the patient subjectively felt much improved. However, she continued to have intermittent nausea, abdominal bloating and weakness. Four months after operation, generalized aches and pains, anorexia, nausea, abdominal bloating and intense weak-

ness developed. At this time enlargement of the liver was noted. A bone survey showed radiological evidence of progressive bone metastasis. The patient eventually died of hepatic metastatic disease seven months after operation.

This case illustrates the following points:

1. The improvement of metastatic disease in one area (lungs) with the simultaneous progression of metastatic disease in other areas (liver and bones).

2. The very poor prognosis of patients with known hepatic metastasis. In retrospect, any patient such as this in whom liver metastasis is found at the time of oophorectomy would not have been subjected to adrenalectomy.

4. Change of Radiosensitivity After Adrenalectomy

It was observed clinically that three of the patients showed an unusually rapid response to external radiation following bilateral adrenalectomy and oophorectomy. This was particularly true of soft tissue metastatic lesions. Endocrine influence on radiosensitivity has been observed by other investigators in experimental animals. According to a report by Ellinger,² adrenalectomy increases the sensitivity of the animal to total-body irradiation, an effect which is reversed by administration of whole extract of the adrenal cortex or of desoxycorticosterone acetate. Cortisone also makes mice more susceptible to total-body radiation and accentuates the mortality from bacterial and viral infections in irradiated animals. This effect is thought to be related to the action of cortisone on lymphatic tissues. Hypophysectomy also makes the animal more susceptible to total-body irradiation, probably because of the effect of this operation upon the adrenal cortex.

DISCUSSION

Upon review of the cumulative experience of the authors and of others who have reported on use of the operation, it is felt that the following statements are warranted:

1. Bilateral oophorectomy and adrenalectomy is a safe surgical procedure with a low operative mortality, especially if performed by an experienced team.

2. Some patients with progressive metastatic malignant disease of the breast are dramatically and objectively benefited.

3. Known cerebral or hepatic metastasis contraindicates adrenalectomy for therapeutic purposes.

The principal problem and the great unknown about this procedure is how to select patients who will be benefited by the operation. So gratifying were the results in three patients in the present series that the authors are convinced this surgical procedure

has a definite place in the therapeutic choices offered to patients with metastatic malignant breast disease. What, then, are the criteria for advising adrenalectomy in a given patient?

First of all it is well to consider some *don'ts*. This procedure must not be contemplated until the patient has clinically significant metastatic disease—that is, definite symptoms, such as persistent bone pains, malaise, weakness, pleural effusion or extensive local growth. It would be unwise, it is felt, to treat relatively localized, slow-growing, silent metastatic lesions by a drastic procedure such as this. (Experience with adrenalectomy in three patients with early localized silent metastasis, performed subsequent to the presentation of this report, was not good.) Secondly, as already indicated, the known presence of cerebral or hepatic metastasis should discourage the consideration of this operation. As a matter of fact, if liver metastasis is found at laparotomy for oophorectomy, it is the authors' present practice just to perform the oophorectomy and cancel the adrenalectomy. Thirdly, the experience with adrenalectomy in elderly patients was not very satisfactory. Patients in their late sixties or seventies do not seem to tolerate the state of surgically induced adrenal insufficiency as well as younger patients, despite seemingly adequate adrenal replacement therapy. These older patients do not feel as well after adrenalectomy as they did before the operation.

What patients, then, are deemed suitable for total adrenalectomy? With the above contraindications and qualifications in mind, the authors have more or less followed the outline suggested by Pearson and co-workers^{11,12} at the Memorial Center for Cancer and Allied Diseases in New York. In brief, the authors' program of management of patients with metastatic carcinoma of the breast is as follows:

A. Premenopausal Women

1. *Surgical oophorectomy.* This is the first step and the procedure of choice in these patients. It will induce objective and subjective remission in approximately 50 per cent of patients so treated.

2. For patients who had a definite remission with oophorectomy and then had relapse, either a course of androgens or adrenalectomy may be considered. If one wishes to be conservative, a course of androgens may be tried for two or three months and if no definite benefits are achieved thereby, total adrenalectomy should be considered as the next step. In the event of a further remission induced by androgens alone, adrenalectomy may be withheld until relapse occurs. From the available evidence, it would be impossible at this time to state categorically whether androgens or adrenalectomy should be tried first.

3. Patients who have had oophorectomy without definite improvement or remission are not candidates for total adrenalectomy.

B. Postmenopausal Women

The precise indications for total oophorectomy and adrenalectomy are not as clear in this group of patients as in the premenopausal patients. There are those who advocate immediate total oophorectomy and adrenalectomy as the treatment of choice in the event of significant metastatic disease in this group of women. Again, if one wishes to be conservative, a course of estrogens or possibly androgens may be tried before adrenalectomy is considered. It would appear that the decision for or against adrenalectomy in this group of patients is a matter of judgment in which various factors are taken into consideration. The factors to be considered would be the length of time since the primary or original mastectomy, the apparent rate of growth of the metastatic disease, and the response to previous therapy (radiation, estrogens and androgens).

It should be emphasized that, whenever feasible, relatively localized metastatic lesions should be treated by radiation or surgical excision before any systemic modes of therapy are considered.

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ADDENDUM

Since this report was first presented, the authors have performed total oophorectomy and adrenalectomy in five additional patients without surgical mortality. Further experience has in no way altered the opinions and conclusions reported in this paper, but has only served to strengthen the previous observations.

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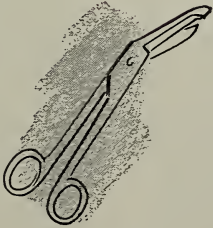
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Public Health and Public Medical Care

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DR. LEROY E. BURNEY,* a guest speaker at the 1955 meeting of the California Medical Association, presented before the Section on Public Health a most interesting paper entitled "Meeting Community Needs—The Combined Role of the Physician, Health Department and Hospital."² In concluding his communication, Dr. Burney said:

"Physicians, hospitals and health departments must not be too proud to work with each other and with other groups. While each of our roles is distinct, the wide chasm separating public health from physicians and hospitals is fast disappearing. The present health needs of our people require us to work together, not with a division of labor, but as a team to provide, effectively, the health services our people and our communities need."

In December of 1955 one of the physicians in the San Mateo County Health and Welfare Department, Dr. James G. Roney, presented a paper on "Multidisciplinary Research"¹⁴ before the Southwestern Philosophical Conference. He discussed two trends in research which also have application in medical administration. Dr. Roney said:

"The first trend is that toward specialization which attempts to satisfy the need for more intensive study in ever-narrowing fields of research and to provide more refined data concerning particular problems. . . . The second trend is that toward a broad frame of reference in research and it attempts to satisfy the need for being meaningful. This need has been recognized by representatives from physical, social and biological sciences. Epidemiological studies of chronic diseases may be cited as examples."

These two thought-provoking papers gave issue to the idea that it might be worth while, and perhaps interesting, to present to this audience a sort of administrative clinical-pathological conference, or perhaps an administrative case study of the San Mateo County Department of Health and Welfare, which combines under a single medical direction the traditional health services, a social service division and a public medical care program in three institutions, an acute hospital with an outpatient department, a chronic disease and rehabilitation institution, and a tuberculosis sanatorium. In similar counties in California these three disciplines are usu-

• This paper deals briefly with the historical development of the major movements and organizations dedicated to the preservation of the health and security of the American people. Statements of various national organizations on the need for integration of these various services for the protection of the indigent are presented, and the experience of one county department in San Mateo which operates a completely integrated department of public health and welfare is reviewed, giving the pros and cons of the operation of a number of disciplines through a single administration. The major advantage of an integrated department of this kind is that all the services having to do with human needs—the needs arising from emotional distress, economic reverses or illness—are combined under the direction of a physician. It is probable that failure of the health discipline to provide such services was a factor in the presentation of the Wagner Act in 1938 and the Wagner-Murray-Dingell Bill in 1943.

Continued close cooperation between the various disciplines devoted to the protection of the health and welfare of American citizens can help in solving some of the current problems.

ally managed by at least three administrative departments—health, county hospital, and welfare—and sometimes four departments when tuberculosis and/or chronic disease care is under separate administration.

Before describing the San Mateo structure, analyzing its strengths and weaknesses, and attempting to fit the pattern into obvious administrative trends in the United States, it may be helpful to review briefly the history of each "discipline" separately.

Disregarding the voluminous background of each of these disciplines for the purposes of this paper, their influence on the problem of human health and welfare may be dated from the time of the emergence of a national organization on the American scene. These dates are:

American Medical Association . . .	1847
American Public Health Association .	1872
American Hospital Association . . .	1899
American Public Welfare Association .	1930

Only the briefest of reviews of medical history is necessary to highlight the trends. The American Medical Association was founded in 1847 to "promote standards of medical education and to improve

¹Presented before the Section on Public Health at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

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medical ethics."¹⁷ A year later, Virchow started his work on cellular pathology, and a fundamental segment of modern medicine was developed. The next major contribution was that of Pasteur and Koch and the period called the "Reign of the Microbes" by Galdston⁷ in which discovery was piled on discovery of specific etiologic agents of the communicable diseases. Surgical operation had been made practicable by the introduction of anesthesia by Long in 1842, and by Morton in 1846. Lister introduced antiseptics in his paper published in 1867 and Halsted introduced aseptic techniques in 1890.

In the period 1900 to the present, major contributions to the knowledge of nutrition and vitamins stemmed from the work of Hopkins in England and Goldberger and others in the United States. These discoveries brought to the attention of the profession that factors other than germs might cause disease.

The field of endocrinology "pregnant with future discoveries" was established by the work of Claude Bernard in the middle of the last century. Continuing research on the thyroid, the pituitary, the adrenals and the pancreas has led to ever wider understanding of normal and pathological physiology. However, not until the recent work of Selye¹⁶ was the concept introduced of the emotions controlling the internal secretions and thus related to abnormal or disease states as described in his "stress syndrome."

It must be noted that all these advances in medicine—pathology, bacteriology, virology, immunology, surgery, nutrition and endocrinology—dealt with specific diseases or specific organs. As each new discipline or subdiscipline was established, it was added to the medical curriculum, until today medical education is a long and crowded affair. However, most of the teaching is "organic" and very few of the professors look at the person as a whole in his setting in society but, as is commonly pointed out, the patient is "a cardiac," "a diabetic," "a hypothyroid," "a prostate." It remained for a Viennese, Sigmund Freud, to develop and demonstrate a theory that man's emotions may make him ill. The increased interest in psychiatry and the ideas of emotionally induced illness or psychosomatic disease has been difficult for some of the "organists" to accept; but it has been demonstrated that man may become sick because his "social relations are defective, because his social environment is noxious, or because of innate, hereditary or acquired inability to deal adequately with his social obligations—that is, with the reality he faces."⁸

The American Public Health Association was organized in 1872 by Stephen Smith and a small group of physicians interested in epidemics and sanitation. At the time of the formation of the A.P.H.A., only

three state health departments existed in the nation—in Massachusetts, California and Virginia. For the purposes of this historical sketch, public health development may be divided into five general eras: (1) The era of sanitation, (2) the era of communicable disease control, (3) the era of individual health services, (4) the era of administrative research, and (5) the present era.

In the first quarter century of the existence of the A.P.H.A., most of the papers published by members dealt with sanitation and the environment. With the discoveries of the bacteriologists, health physicians became more scientific in their approach to the control of communicable disease. The first public health laboratory, however, was not established until 1893, by Dr. Herman Biggs in New York City.

About the turn of the century, the voluntary health agencies began to make their appearance in the American culture—in 1879, the first Visiting Nursing Association in New York City; in 1892, the Anti-Tuberculosis Society in Philadelphia; in 1908, the American Child Health Association; in 1909, the National Committee on Mental Health; 1913, the American Cancer Society, with many others to follow.

The early nineteen hundreds also saw the development of the first efforts to promote the health of the individual with the organization of well child conferences, school health programs, and maternal health programs, and the enthusiastic promotion of these health programs brought the health officer into occasional controversy with his brother practitioner in private practice.

In 1913, the first graduate curriculum in public health was established at the Harvard-Massachusetts Institute of Technology School of Public Health and this also was the year of the first organized county health department and also the first year that every state in the union had a state health organization of some sort.

In 1913, the American Medical Association appointed Dr. Charles V. Chapin to make a study of the State Health Department activity. His report was published³ in 1915, and initiated a period of more than 30 years of intensive administrative research, surveys, evaluations, health contests, organizational improvements and unprecedented growth of health services.

The present era has no specific date or event for initiation, but something that had been developing for many years was crystallized by the World Health Organization's emphasis on the promotion of positive health as contrasted with the mere prevention of, or absence of disease. This led physicians in general, and public health personnel in particular, inevitably to a consideration of the problems of mental health and chronic diseases. The prominence

of these two general subjects in current medical and sociological publications eloquently testifies the concern chronic disease and mental health are causing not only physicians, but also health officers, hospital administrators and social workers.

Modern advances in medicine would never have been possible without the concurrent development of the modern hospital. These magnificent structures, teaching and research centers and havens of healing had a lowly origin in institutions known as "pest-houses," "the alms-house," and "asylums." The first alms-house in the United States was started by William Penn in Philadelphia, in 1713. In 1742 it became a hospital. Benjamin Franklin chartered the first private hospital in 1751. It opened in 1755. In 1802 the federal government established two marine hospitals, one at Boston and one at Norfolk, Virginia. The American Hospital Association was organized in 1899. In 1873 there were in the United States 149 general hospitals for acute illness. They had 35,453 beds. In 1951 there were 4,890 such hospitals with 640,207 beds.⁴ In 1955, California had 39,133 beds in general hospitals for acute illness, of which 10,054 were in county hospitals.¹¹

The tremendous contribution of the American College of Surgeons, which started its program of hospital standardization in 1918, in the improvement of hospital service cannot go unnoticed. In 1950, the College of Surgeons merged its hospital accreditation program with those of other national medical associations and the Canadian Medical Association to form the Joint Commission on Accreditation of Hospitals.

The trend for general hospitals to try to solve the problem of providing care for long-term patients with chronic illness, as well as short-term care for psychotic patients, is still young in California but it is none the less obvious. Since 1954 the State Advisory Hospital Council has allocated funds to five general hospitals—three county hospitals and two nonprofit-private hospitals—for a total of 195 beds for mental patients. In the past five years funds have been granted for the construction or enlargement of nine chronic disease hospitals to add a total of 759 beds. Three of them are county hospitals and six are private nonprofit or district hospitals. So there is evidence that the problems of chronic diseases and mental disease confront the administrators and directing boards of acute hospitals just as these problems confront health departments and private practice.

In comparison with the other three disciplines described, social work is both the oldest and the newest. In all cultures and in all times there has always been a certain portion of the population made up of persons unable to take care of themselves. Various methods in varying degrees have

been designed to assist these people. The English Poor Laws of Elizabeth, enacted in 1601, are usually cited as the basic law for public relief. The colonies carried over the same ideas and established "Overseers of the Poor," and "Workhouses," much as they had known in England. Alms-houses, orphanages and asylums were developed to care for those who could not survive in free society, due to illness, deprivation of parents or mental disease. In the early days these functions were largely a local responsibility; later, states provided some service, and finally the federal government, forced by the depression of the 30's, participated in providing relief for certain categories.

Much of the leadership in the social service field came from the voluntary agencies and those associated with the various church groups. Even with the now active financial participation of the federal, state and local governments, these voluntary agencies are active in the field. The 1951 Social Work Year Book¹⁹ lists 421 national voluntary agencies whose programs come within the scope of social service interest.

The history of the changing concepts of social work is too extensive to attempt to cover here. Perhaps it can be best skimmed by quoting some of the chapter headings from the address of Don Howard, Dean of the School of Social Work at University of California at Los Angeles, entitled "Fifty Years of Social Work in the World," delivered before the Fifth International Conference of Social Work in Paris, in 1950.¹² Some of these are:

1. From Palliation to Prevention
2. From Service to the Few to Services to Many
3. From Low to Higher Standards of Service
4. From Condescending Benevolence to Democracy
5. From Manipulation to Aid in Self-Direction
6. From Intuitive to Scientific Service
7. From Local to National and on to International Responsibility
8. From Voluntary to Governmental Auspices
9. From Lay to Professional Service
10. From "Going It Alone" to Multidiscipline Approach

Each of the above subtitles could be expanded in considerable detail, but they serve as guideposts to the trends in social work which is forever striving to keep people from getting into trouble—economic, emotional and medical—and helping them if they do get out of step with society. All of us have needs—needs for affection and approbation, needs for a sense of security and satisfying ambitions, fundamental needs for clothing, food and shelter, and needs for medical care. Most persons who apply to a public welfare department come seeking financial help, but this may only be a symptom of deprivation

of some other basic need. More often than not, the need for financial help is because of illness, or illness has resulted from too long delaying the requesting of financial help. In response to the demand for medical care in the lower economic levels, welfare departments have proceeded to develop their own methods of obtaining medical care. "The structure of these services was built largely without benefit of blueprint. Different parts were constructed at different times to meet different needs—in widely separated communities."¹

The methods of solving the problem of adequate medical care for the indigent are legion and are adequately described in the reports of the A.M.A. Committee on Indigent Medical Care, the publications of the Committee on Medical Care of the A.P.W.A.,⁵ by Franz Goldman in his book "Public Medical Care,"⁹ The Committee on Medical Care of the A.P.H.A.²¹ and many other publications.^{6,13,15,20,22,23}

Most of the papers cited in the preceding paragraph review existing programs in various parts of the country where cooperation exists between health, welfare and public medical care programs, or make a plea for closer integration, or outline basic principles for joint program planning. In San Mateo these facilities were established by charter 23 years ago.

In 1932 a Board of Freeholders was elected in San Mateo to draw up a charter to submit to the people and to the State Legislature. San Mateo at that time had about 75,000 population and the departments under discussion were small. The Community Hospital had about 70 beds; there was no separate tuberculosis sanatorium; there was a "Relief Home"; the Welfare Department consisted of two workers and a clerk; and the Health Department consisted of a part-time physician and several part-time city health officers. Whether for administrative convenience or by prophetic foresight will never be known, but these four departments were unified by the following statement from the charter adopted by the people on November 8, 1932, and ratified by the Legislature on January 23 and 24, 1933, to be effective July 1, 1933:

"The director of Health and Welfare shall be a trained and experienced physician or doctor of public health. He shall devote his full time to his duties and shall have administrative supervision over the health, sanitary and social service of the County and all hospitals and other health and welfare institutions for this service shall be under his direction."

For the first few years, this new department had its share of organizational and political troubles. However, the second director, Dr. Charles Gans, was able to consolidate all the cities of the county into one health jurisdiction. All other services in the department—social service, county hospital and tu-

berculosis sanatorium—were on a countywide basis. In 1946, the County Board of Supervisors employed the Public Administration Service to make a survey of the department and the survey served as the basis for a rather extensive reorganization which started with the appointment of the third director in the history of the department.

There are, to be sure, hazards in a multidisciplinary administration of this type:

1. *Training of the administrator.* So far as the author knows, there is no paragon alive who is equally versed and efficient in medicine, health administration, hospital administration, rehabilitation and social service. When the charter was written, rehabilitation was not an accepted goal and the Social Service Division was very small, so emphasis was placed on medical and health training. This is not too serious a deterrent, as the principles of administration do not vary from administrative field to administrative field and, once an individual becomes familiar with the vocabulary and can communicate with social workers, this service can be administered through a strong and well-trained social work superintendent.

2. *Tradition.* This type of organization is far from traditional and although offering many advantages, which will be reviewed shortly, health officers, as well as welfare directors, resist complete administrative consolidation. Some of the reasons offered by medical health officers against a too close relationship with welfare departments are: (1) Health service is for all of the people, not just a segment; (2) health services should not be identified with the indigent segment of the population; (3) welfare departments would fail to communicate with health officials because of their rules of confidentiality; (4) health workers could not trust social workers to use medical data and health information wisely; and (5) health services for indigents would involve diagnosis and therapy and health departments should stay out of these fields, even for the properly certified indigent. These objections are, no doubt, offered in all sincerity but, to the author, after eight years of experience, none of them have proven a handicap.

3. *Financing.* The funds needed to support a welfare service and three institutions are large compared with the money appropriated for the health division. In San Mateo County the Health Division budget is \$591,000, while the total budget for the Department of Public Health and Welfare is over \$9,000,000. So long as the Freeholders had the wisdom to designate a physician with public health training as the director, the chances of the Health Division's getting lost in the competition for budget is negligible; however, the popular press frequently refers to the total Department of Public Health and

Welfare as the "Health Department with a nine million dollar budget."

4. *Integration.* Although the administrative mechanism for integration is present, realization of complete integration is no simple matter. The director and the four division heads can discuss, plan and agree to execute a particular program, but integration does not always carry on down to the operating staffs. Integration between social worker, ward physician and public health nurse occurs easily around a specific case problem but not always so easily around an abstract proposed program.

5. *Communication.* Closely related to the problem of integration is the problem of communication—varying vocabularies, different approaches, widely separated concepts, and even clichés peculiar to one discipline or another stand in the way of easy communication between outpatient physician, social worker, sanitarian, hospital nurse, public health nurse, laboratory technician and nutritionist. Roney¹⁴ said: "Integration of thoughts and activities of representatives of different disciplines with different orientations and approaches to problems is difficult. It is far easier to integrate the ideas that issue from beneath a single cranium than it is to attempt satisfactory synthesis of group thought." John Gordon, in discussing multidisciplinary research, said, "No symphony was ever composed by a committee; nor a great poem written."¹⁰

Many other lesser hazards to multidisciplinary administration might be listed, but these five—training, tradition, financing, integration and communication—seem to represent the major pitfalls.

Against the hazards, the advantages of multidisciplinary administration are myriad:

1. *Flexibility.* Flexibility of administration is facilitated without wasteful interdepartmental negotiations that are common where there are separate departments. For example, in San Mateo County when we wished to introduce psychiatric social work into our Tuberculosis Sanatorium, it was a simple administrative procedure to transfer a half-time psychiatric social worker from the Adult Psychiatric Clinic. When we wanted to implement the understanding and cooperation between our head nurses in the hospital and the field nurses in the Health Division, it was easy to arrange for a temporary exchange of assignments. When we wanted to introduce medical social work into the hospital (fifty years after Richard Cabot had suggested and implemented the idea), we had available trained social work supervisors to assist in the organization of the service. When a child in the Receiving Home, under the supervision of the Social Service Division, needs medical care or hospitalization, there is no delay in arranging for either. When it was noted

that 64 per cent of persons needing general assistance claimed illness as the cause of their dependency, a screening clinic was set up in the Health Division quarters to examine these persons as a preliminary to rehabilitation.

2. *Broad approach.* Each of the division chiefs in the department is competent in his particular field, but also interested in the related fields within the department. The community of knowledge lies in the group rather than in the mind of any one person. This provides a broad and many-faceted approach to a social or medical problem. There is also the ever-present potentiality for cross fertilization of ideas by the various disciplines represented in the department.

3. *Decappling the service.* One of the main faults found with confused, multiple, separate administrations is that patients and clients often get lost in the gaps, or that whole problems are neglected because each department thinks it is the other's responsibility. This leads to confusion, inefficiency, waste, duplication, gaps in service, delay and lack of continuity of care. Even in a unified department, sometimes embarrassingly, a patient is lost in an administrative crevice; but this probably happens much less frequently and is more promptly discovered than when public medical care, public health and welfare-administered medical care programs are operated separately. Smillie has said: "Two separate types of governmental medicine developed through the years: Official public health services, a health department function which attempted to prevent diseases and medical care of the sick poor which was provided by departments of welfare. Though these frequently impinged and overlapped, they seldom were interrelated and almost never fused."¹⁸

4. *Professional relationships.* The administrative health officers of California have earned and enjoy the confidence of their colleagues in private practice. In the 10,054 county hospital beds in this state, the leading physicians of each community donate their services for the care of the medically needy. Here, the health officer administering a medical care program comes in close contact with his medical conferees and is sensitive to their wishes. This builds general medical confidence in the total program and facilitates progress.

5. All other advantages of a combined department become minuscule in comparison to the major concept that in one department of local government are combined all those services having to do with human needs whether these needs arise from emotional distress, economic reverses, illness, or need for health service. In the United States and in California, there is broad general agreement on this principle, but rather limited implementation. The

A.M.A. Committee on Indigent Medical Care holds that "a single public administrative unit in the community should advance integration of medical care programs." The A.P.H.A. and the A.P.W.A. have issued a joint statement²¹ emphasizing the need for close cooperation between welfare, health and medical care programs. Six major health organizations have issued a statement on "Tax-supported Personal Health Services for the Needy"²² in which Point 2 states: "This responsibility (with the possible exception of services provided in institutions) should be assumed by a single agency which may be either the health or the welfare agency at each level of government."

In spite of these strong statements of principle, few areas have merged these independent services. True, on the federal government level, health, federal hospitals and welfare, as well as education, have recently been fused into a single administrative unit, with cabinet status. Maine is the only state with a combined State Department of Health and Welfare. In Kansas, the State Welfare Department and the State Medical Society are working toward a co-operative arrangement for indigent medical care. The state health departments of California and New York have loaned medical personnel to their respective state departments of welfare for special projects and to promote closer coordination of programs in the medical field. In Baltimore, the Health Department administers the indigent medical care program. In Denver, the Health Department and the County Hospital are unified. It is obvious that no single plan has evolved.

Although the advantages of the San Mateo Plan have been perhaps described with more emphasis than the disadvantages, it should not be assumed that this plan is presented as an ideal or model. It has been described only to show one way in which administrative coordination may be obtained between health service, public medical care and welfare.

The important points and reminders which should be distilled from this long discussion are:

1. Trends of thinking, crystallized in declarations by major national health and professional associations, point up the importance of providing to our citizens adequate service to prevent disease and to promote as nearly as possible optimum health.

2. Everyone has needs of various sorts, but top in the priority of need is the need to preserve health and the ability to earn a living and enjoy life.

3. The solution of this problem is complex and difficult and demands the best thinking of the many disciplines involved—medicine, public health, social service, anthropology, and statesmanship.

4. Failure of the health disciplines to provide such service led to the studies of the Interdepart-

mental Committee which reported to the President in 1938 and led, in turn, to the introduction in Congress of the Wagner Act, known as "The National Health Act of 1939" and, later the Wagner-Murray-Dingell Bill in 1943.

5. Failure to develop cogent thought about this problem and to develop on the local level satisfactory solutions will only lead to further attempts to "legislate" good health.

6. The quest for a sound solution to the problem of meeting medical needs presents an almost frightening challenge to all of us.

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Management of Tuberculosis in Childhood

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PEDIATRIC INTEREST in childhood tuberculosis has varied tremendously during the past fifty years, even though it is one of the most important medical problems that confronts pediatricians. Formerly, morbidity and mortality were exceedingly high and large numbers of hospital beds were devoted to this disease. Concentration on intensive medical programs, emphasizing case finding, isolation and sanitarium care, resulted in a pronounced decrease in incidence and mortality. Coincidentally pediatric interest was diverted elsewhere and management of the disease was largely relegated to a few centers. Discovery of the value of streptomycin, between 1944 and 1946, awakened clinical interest, but it was not until 1952, when the therapeutic effectiveness of isoniazid (INH) was discovered, that significant enthusiasm was rekindled. Numerous recent publications have documented the effectiveness of specific antimicrobial treatment and have posed many pertinent questions regarding the proper use of these agents. The most important of these problems seem to be: Which children shall be treated? What drugs shall be used? How long shall the treatment be continued? In light of these developments, a brief review of present concepts seems indicated.

The problem is still a considerable one, for although there has been a steady decline in both the case rate and the mortality rate, there were 7,267 new cases of tuberculosis reported in California in 1955 (Table 1). Statistics gathered by the Los Angeles City Health Department, pertaining to children under 15 years of age, are more revealing. Table 2 shows an increase in the number of cases in 1954 and 1955 although these figures are not corrected for population growth. Table 3 shows a sharp decrease in mortality associated with the use of INH from 1952 to 1953. A review of these data reveals that although deaths have strikingly decreased, the total number of cases has increased. This had been previously indicated by Bush,³ who also cited evidence of increase in Santa Clara County. Routine tuberculin testing of 1,380 children attending well-baby clinics there, revealed a 2.9 per cent of positive reactions in 1951. A similar group in 1952 showed only 1.1 per cent positive reactions, but in 1954 an additional group revealed a positive reaction inci-

• Statistical evidence documents an overall decrease in incidence of tuberculous infections with continued decline in mortality. Although the number of deaths has decreased in children under 15 years of age, in the city of Los Angeles, the figures suggest a possible increase in total cases during the past two years.

Data on 530 cases observed at Los Angeles Children's Hospital from 1934 to 1955 were reviewed with respect to age, race, and mortality under changing methods of management.

Available antimicrobial agents are discussed with suggestions for criteria for treatment and for specific treatment schedules.

dence of 2.4 per cent. While it is obviously impossible to cite the many possible explanations, one important change in more recent patient management deserves mention: Strict isolation and segregation are probably not as carefully carried out as heretofore. This is suggested by the decreasing adult patient load in tuberculosis hospitals, resulting from the increasing use of home treatment, which in turn may afford opportunity for closer family contacts with children. Although the significance of this point is not entirely clear, it is strikingly evident that physicians dealing with children must be alert to this problem and conduct pediatric examinations (including routine tuberculin testing) in such a

TABLE 1.—Tuberculosis in the State of California—Morbidity and Mortality Statistics

Year	Population (Million)	Cases	Case Rate (per 100,000)	Mortality (per 100,000)
1920.....	3.55	8,841	248.7	156.3
1950.....	10.42	8,838	84.8	21.7
1951.....	11.73	8,076	75.2	19.5
1952.....	11.16	7,903	70.8	15.5
1953.....	11.66	8,094	69.4	11.4
1954.....	12.12	7,904	65.2	9.8
1955.....		7,267		Not Available

From the State of California, Department of Public Health, morbidity and death records.

TABLE 2.—Cases of Tuberculosis in Children Under 15 Years of Age in the City of Los Angeles (Not corrected for change in population)

Year	Under 1	1 to 4	5 to 9	10 to 14	Total
1950.....	10	75	28	29	142
1951.....	5	54	15	13	86
1952.....	12	84	19	17	132
1953.....	5	72	29	20	126
1954.....	8	83	45	21	157
1955.....	15	114	65	20	214

From the Department of Pediatrics, University of Southern California School of Medicine, and Los Angeles Children's Hospital.

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manner that the possibility of tuberculous infection is not overlooked.

Evaluation of therapy requires an appreciation of the natural course of the disease and a critical study of a variety of adequately controlled treatment

TABLE 3.—Deaths from Tuberculosis in Children Under 15 Years of Age in City of Los Angeles (Not corrected for change in population)

Year	Under 1	1 to 4	5 to 9	10 to 14	Total
1950.....	3	8	4	0	15
1951.....	0	14	4	0	18
1952.....	1	10	2	0	13
1953.....	0	4	1	0	5
1954.....	3	3	2	0	8
1955.....	Data not available				

TABLE 4.—Relationship of Age and Race to Mortality from Tuberculosis in Children—Interval from Discovery to Death (Data from Bralley¹)

	Age Under 3 Years		Age 3 to 15 Years	
	White	Colored	White	Colored
Cases	178	334	226	410
Death rate (per cent) :				
First year	4.5	11.2	0.4	3.0
First 5 years	8.1	18.3	0.4	5.3
First 10 years	8.1	19.8	0.4	7.6

TABLE 5.—Mortality from Tuberculosis in 512 Children Infected Before 3 Years of Age—Interval from Discovery to Death (Data from Bralley¹)

	Positive Tuberculin Reaction Plus Parenchymal Lesion on Initial X-ray Examination			Positive Tuberculin Reaction Without Parenchymal Lesion on Initial X-ray Examination		
	White	Colored	Total	White	Colored	Total
Cases.....	43	140	183	135	194	329
Death rate (per cent) :						
First year.....	16.3	22.1	20.8	0.8	3.2	2.2
First 5 years.....	20.9	32.4	29.6	3.9	7.6	6.0
First 10 years.....	20.9	35.8	32.0	3.9	7.6	6.0

TABLE 6.—Mortality from Tuberculosis in 636 Children Infected Between 3 and 15 Years of Age—Interval from Discovery to Death (Data from Bralley¹)

	Positive Tuberculin Reaction Plus Parenchymal Lesion on Initial X-ray Examination			Positive Tuberculin Reaction Without Parenchymal Lesion on Initial X-ray Examination		
	White	Colored	Total	White	Colored	Total
Cases	4	37	222	368		
Death rate (per cent) :						
First year.....	25.0	24.3	0.0	0.0		
First 5 years.....	25.0	33.7	0.0	1.3		
First 10 years.....	25.0	38.2	0.0	3.3		

Name of Category	Total Cases	Nonspecific Treatment		Treated with				Per Cent of Series	Deaths (Per cent)
		Total	Deaths	Strept., PAS		Strept., PAS, INH			
				Total	Deaths	Total	Deaths		
Pulmonary.....	225	190	14	15	2	20	0	42.4	7.1
Meningitis.....	143	111	11	19	12	13	1	27.0	86.7
Bone.....	97	75	4	17	1	5	0	18.3	5.15
Lymphadenitis.....	29	17	1	8	0	4	0	5.5	3.5
Misc. (eye, skin, renal).....	36	34	6	2	0	0	0	6.8	5.5
Total.....	530	427	136	61	15	42	1	100	28.6

regimens. Data gathered by Bralley¹ (Table 4) clearly show greater mortality in negro than in white children, and increased mortality under the age of three years. In further analysis of this group of children it was noted that there was increasing mortality associated with the presence of parenchymal lesions visible by x-ray films at the time of the first examination (Tables 5 and 6).

Lincoln's study of 622 children with primary tuberculosis revealed 90 per cent of deaths occurring within one year of the discovery of the disease.¹⁵ The mortality rate in infants under six months of age was 55 per cent; in the group from one to two years of age it was 23 per cent; in the four to nine year age group, 15 per cent. Lincoln noted that the size of the pulmonary parenchymal lesion was directly related to mortality: The rate was 44 per cent among those with the largest lesions, and only 23 per cent among those with minimal lesions. Her study further emphasized the importance of the absence of parenchymal lesions in an additional group of infants under two years of age who had positive reaction to skin test but no x-ray evidence of pulmonary or nodal disease. The mortality rate in this group was only 10 per cent, as compared with 32

per cent in a similar group with x-ray evidence of parenchymal involvement. Unfortunately these data were not correlated with race.

A study of 530 cases in children admitted to Los Angeles Children's Hospital from 1934 to 1955 inclusive has been made. The patients differed somewhat from those in other series in that most of them were ill and had clinical and/or laboratory evidence of active disease. Children over three years of age with minimal parenchymal disease or hilar lymphadenopathic involvement were, until recently, treated as outpatients. Thus, the series of 980 cases of primary tuberculosis reported by Lincoln¹⁴ contained 126 cases of meningitis, or 12.8 per cent of the total, whereas 27 per cent of the 530 cases in the present study were meningitis. Table 7 shows the distribution of the cases correlated with therapy, showing an overall mortality rate of 7.1 per cent in pulmonary infection compared with 86.7 per cent mortality in meningitis. Bone tuberculosis with or without lung involvement comprised 18.3 per cent of the cases and the mortality rate was similar to that for pulmonary involvement. There was pronounced decrease in mortality in the group of 42 patients with diseases of all categories who were treated with streptomycin-para-aminosalicylic acid-isoniazid combination. In Table 8 the mortality rate is correlated with the race of the patients. Although the Mexican population of Los Angeles County, according to 1950 data, is less than 10 per cent of the total population, 36.1 per cent of all patients with tuberculosis admitted to the hospital came from this group. It had been the authors' clinical impression that Latin-American children did not have as much resistance to tuberculous infection as do other children. However, this is not borne out by the statistics gathered, which actually show little significant difference in mortality rates in the racial groups listed.

The hypothesis has been proposed by Dickey⁷ that mortality might be directly related to family contact in that repeated exposure to large infecting doses of organisms might more readily occur. No such relationship existed in the present series (Table 9).

TREATMENT

Before the advent of streptomycin, therapy was primarily directed to measures suited to improve the patient's own defense against tuberculous infection. These consisted of optimum nutrition, rest, surgical procedures where indicated, and other general supportive measures. Recently great interest has developed in the proper use of specific antimicrobial agents. Of these streptomycin, para-aminosalicylic acid (PAS) and isoniazid (INH) are most effective and widely used.

TABLE 8—Relationship of Race to Mortality, Children's Hospital, Los Angeles, 1934-1955

Race	Cases	Proportion of Series (Per Cent)	Mortality Rate (Per Cent)
White	290	54.6	26.4
Mexican	192	36.1	31.8
Negro	36	6.7	27.7
Oriental	1	0.2	0.0

TABLE 9—Relationship of Family Contact to Mortality, Children's Hospital, Los Angeles, 1934-1955

	Family Contact with Tuberculosis	No Family Contact with Tuberculosis
Number of cases.....	199	331
Number of deaths.....	55	97
Rate of mortality (per cent)	27.6	29.2

Streptomycin has a pronounced bacteriostatic effect in vitro and in vivo.²¹ However, even when administered to guinea pigs before experimental infection it will not prevent dissemination and local necrosis, and hypersensitivity develops before the infection begins to regress. Clinically it is of greatest value during the acute inflammatory stage.¹¹ When administered alone, bacterial resistance develops rapidly; significant bacterial resistance has been observed in 70 per cent of patients treated for 90 to 120 days. Toxicity is manifested by disturbance of vestibular function and is most likely to result from intraspinal administration or large, daily, intramuscular doses given continuously over several weeks or longer. Dihydrostreptomycin is likewise effective²³ but has similar toxicity, affecting the function of the eighth nerve.

PAS is inferior to streptomycin^{11,21} but has the great advantage of delaying emergence of bacterial resistance when used in combination with either streptomycin or INH. Toxic manifestations are infrequent, but nausea, vomiting, anorexia, fever, skin rash and hemolytic anemia have been observed.

Isoniazid has been available since 1952 and it appears to be the most valuable agent currently available. Experimentally it has been shown to surpass in bacteriostatic effect both streptomycin and PAS.¹⁴ It is capable of diffusion in therapeutic amount into caseous masses,⁸ body tissue spaces, and macrophages. Administered to monkeys and guinea pigs,⁵ before and during challenge with virulent tubercle bacilli, complete protection was afforded. After discontinuance of the drug, the guinea pigs later had a considerable acquired resistance to a similar and unprotected challenge. Emergence of bacterial resistance is similar to that observed against streptomycin^{5,20} and can likewise be delayed by combination with either streptomycin or PAS.²⁵ Clinical and experimental evidence shows increased antibacterial effect of INH with either

TABLE 10—Mortality in Relation to Therapy, in Three Age Groups—All Types of Tuberculous Infection, Children's Hospital, Los Angeles, 1934-1955

	Under Three Years			Three to Nine Years			Over Ten Years		
	No Spec. Treatment	Strept. PAS	Strept. PAS, INH	No Spec. Treatment	Strept. PAS	Strept. PAS, INH	No Spec. Treatment	Strept. PAS	Strept. PAS, INH
Cases.....	219	39	25	166	22	14	42	2	1
Deaths.....	85	13	1	43	2	0	8	0	0
Mortality (per cent).....	39.0	33.3	4.0	26.0	9.09	0.0	19.1	0.0	0.0

streptomycin or PAS, but not when combined with both, in the management of pulmonary infection.^{16,22,26,27} Toxicity of INH is apparently dependent upon large dosage²⁶ and primarily results in peripheral neuritis or convulsions. Fever, proteinuria, dermatitis, leukopenia and psychosis have been described but are uncommon.

Newer drugs are available and are in process of investigation. Pyrazinamide is remarkably effective when combined with INH, but the occurrence of drug-induced hepatitis has limited its usefulness. Viomycin is not as efficacious as streptomycin and its excessive toxicity precludes widespread use. Cycloserine is currently being used experimentally and its apparent effectiveness warrants further evaluation.

Antituberculous agents have strikingly altered the course of childhood tuberculosis. Among 980 children with primary tuberculosis admitted to Bellevue Hospital from 1930 to 1946, Lincoln¹⁴ reported 21.5 per cent mortality with no specific therapy. From 1947 to 1951, a reduction of mortality to 5 per cent was achieved in 421 patients treated with streptomycin plus PAS or promizole in 35 per cent of the cases. From 1952 to 1953 INH was added to the therapy of 129 patients, with a reduction of the mortality to 1.5 per cent. Although meningitis was the cause of 60 per cent of the deaths in the first group, meningitis did not develop in any of the cases in which INH was used. Similar reports are available from other centers. One case of meningitis was reported recently in a patient receiving INH therapy.¹⁷

Table 10 represents an analysis of the data on the present series relating age to mortality and therapy. As in other reports, the data show a high mortality rate in the young age group and are similar to those reported by other investigators regarding the efficacy of INH, although the number of treated cases is small.

It is agreed that tuberculous meningitis is the most severe form of infection and presents the greatest threat to life. Formerly 100 per cent mortality was inevitable, but with streptomycin and promizole Lincoln achieved a reduction to 37 per cent.¹⁴ The addition of INH resulted in further reduction in mortality to 12 per cent, accompanied

TABLE 11—Mortality of Tuberculous Meningitis, Children's Hospital, 1934-1955

	No. of Cases	Neurol. Sequelae	No. of Deaths	Rate of Mortality (Per Cent)
No specific treatment	111	0	111	100
Treated with Strept., PAS	19	5	12	63.1
Treated with Strept., PAS and INH	12	2	1	9.9

TABLE 12—Recommended Treatment of Meningitis and/or Miliary Tuberculosis in Childhood

Drug	Dose/24 Hours (Per Kilogram of Body Weight)	Schedule	Length of Treatment
Streptomycin* Intramuscular	50 mg. not to exceed 1 gm.	Daily	First 1 to 2 mos.
Dihydrostreptomycin	50 mg. not to exceed 1 gm.	Thrice/week	From 2 to 6 mos.
PAS (Oral)	0.4-0.5 gm.	Daily Divide 3 doses	First 2 mos.
	0.2-0.25 gm.	Daily Divide 3 doses	From 2nd mo. to 2 years
INH† (Oral)	15 mg.	Daily	First 6 mos.
	8 mg.	Daily	From 6 mos. to 2 yrs.

*Streptomycin and dihydrostreptomycin in equal quantities of each to make the total recommended dose when administered intramuscularly.

†Pyridoxine, 25 mg. daily, until INH is decreased.

by a decline of sequelae in survivors. Other investigators have indicated benefit from accompanying adrenal steroid therapy⁹ and have reported a mortality rate of 6.45 per cent² with this therapy. In the present series there was a sharp drop in neurologic sequelae and in mortality when INH was added to the therapy. The neurologic sequelae noted in two cases in the group treated with INH were partial hearing loss, possibly caused by intraspinal streptomycin.

SPECIFIC TREATMENT SCHEDULES

In most schedules of treatment INH is used as the primary agent, but PAS or streptomycin is included.^{18,19,22,23,26} In dealing with the most serious forms of infection, miliary and meningeal, many investigators use the three agents simultaneously. The schedule used at Los Angeles Children's Hospital is outlined in Table 12.

Intraspinal medication is no longer used since INH so readily diffuses into cerebrospinal fluid. Intraspinal injection of streptomycin probably was the cause of much of the previous vestibular damage and its omission alone will likely result in fewer sequelae. Adrenocorticotrophic hormone or cortisone is not routinely used at Children's Hospital. It has been suggested that these agents may reduce the fibrinous exudate, preventing blocks in spinal fluid drainage and allowing antimicrobial agents to have a better access to the bacteria.² Parenteral INH and PAS should be used initially if there is any question regarding the adequacy of the oral route. Daily oral administration of pyridoxine, in doses of 25 mg., is recommended with INH to prevent peripheral neuritis, although this complication was not noted in patients treated without it in the present series.

Ideal management of the active primary infection is still in doubt and must await carefully controlled, long-term studies. Antimicrobial agents are highly effective in reducing bacterial population, and with early INH therapy positive skin reactions have been lessened in intensity and even reversed. The most dreaded complication, meningitis, can be prevented, and experimental evidence is strong⁷ that initial infection may be preventable by INH, even with close exposure. Many investigators therefore feel justified in advocating routine therapy in all patients with recently developed positive skin reactions, especially in infants up to the age of two years (and for those with family contacts up to six years). The question is now being seriously asked whether all children with active primary tuberculosis should not be so treated.^{6,8}

Perhaps such a course will indeed prove ideal, but there are several factors that should not be overlooked. Past experience with chemotherapy and antibiotics has demonstrated dangers, both obvious and subtle. Long-term changes in bacterial populations have posed new problems. The increasing numbers of severe infections with antibiotic-resistant staphylococci is a striking illustration. In consequence, clinicians are constantly challenged to employ, where possible, other available methods to promote the patient's recovery, and to reserve antibiotics and chemotherapy for cases in which the findings and the course indicate the ineffectiveness of other measures. It is unthinkable that a physician's knowledge and clinical judgment should not be utilized to the fullest in deciding the individual management of each specific case. Data are available to suggest criteria which should provide safe and careful individual patient management, avoiding empiric antimicrobial therapy which may ultimately prove disastrous.

Data of Brailey,¹ Lincoln,¹³ and Levin¹² clearly depict the increased dangers of dissemination during the first year after infection, as well as the increased mortality risk in infants under three years of age. Correlation of mortality with parenchymal pulmonary involvement is clearly shown by Brailey: In children under three years (white and colored) during the first year after infection the mortality rate was 20.8 per cent when there was parenchymal involvement. For patients with positive skin reaction, but without parenchymal involvement, on the other hand, the mortality rate was 2.2 per cent. Considered by race, this latter group was divided: In white children the rate was 0.8 per cent and in colored children 3.2 per cent. The same trend is present in those from three to fifteen years of age. In that group, ten years after discovery of infection, the mortality in those with initial parenchymal lesion was 25.0 per cent for the white population and 38.2 per cent among the colored. In those without parenchymal disease, the mortality was 0.0 per cent in the white and 3.3 per cent in the negro population.

In view of the natural course of the disease, the following criteria are suggested:

- A. Active antimicrobial treatment should be given when:
 1. There is positive skin test in addition to conditions (2) and (3).
 2. Parenchymal pulmonary lesion present (visible by x-ray).
 3. Clinical evidence of active infection present.
- B. No active antimicrobial treatment given, but careful observation and frequent reevaluation should be done when:
 1. There is positive skin test only.
 2. Hilar adenopathy is present without parenchymal involvement.
 3. There is no clinical evidence of active infection.

The individual physician is obviously the key figure in the detection and management of tuberculous patients. Skin testing must be made a routine office practice and used as otherwise indicated. Children under the age of three years with positive reaction to tuberculin skin test must have detailed clinical evaluation and must be examined periodically by chest x-ray until quiescence of the infection is determined or until healing has occurred with drug therapy. With close and careful observation, dissemination of the infection from an initial focus can be detected and appropriate drug therapy can be instituted as needed. In this manner specific antimicrobial therapy can be avoided in the majority of

TABLE 13—Recommended Treatment of Active Pulmonary Tuberculosis in Children

Drug	Dose/24 Hours (Per Kilogram of Body Weight)	Schedule	Length of Treatment
PAS (Oral)	0.3 to 0.4 gm.	Daily	First 2 months
	0.2 to 0.25 gm.	Divided dosage Daily Divided dosage mos.	From 2 to 12 mos.
INH* (Oral)	10.0 mg.	Daily	First 6 months
	8.0 mg.	Daily	Thereafter to 12 mos.

*Pyridoxine, 25 mg. daily, orally, until INH is decreased.

patients having merely a positive skin test for tuberculosis.

Table 13 outlines the author's suggested plan for the application of specific treatment. In the management of the pulmonary infections, use of the PAS-INH combination has been shown to be as efficacious as the INH-streptomycin combination, or as all three agents used simultaneously. The total length of therapy should be at least 12 months, and it should be extended to 18 or 24 months in case of inadequate resolution of the lesion. Therapy of shorter duration often is followed by clinical relapse, especially in the fibrocaceous type.

Tuberculous adenitis is occasionally difficult to manage.¹⁸ Once the diagnosis is established, treatment should be instituted as for pulmonary infection. After four weeks of therapy, tonsillectomy should be considered. Usually considerable regression of enlarged nodes occurs; if not, and particularly where there is evidence of suppurative, surgical excision should be performed. Specific therapy makes the danger of chronic fistula formation quite unlikely.

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The Sexual Psychopath in California

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SEXUAL OFFENDERS in our community have been the subject of considerable concern to the public, the medical profession and the legal profession. The concept that many persons who perpetrate sexual acts offensive to society have a mental abnormality that is susceptible to medical treatment, caused the enactment in California of a law providing for the hospitalization and treatment of such persons. The first law governing "sexual psychopaths" in California was passed in 1939 and it has been substantially revised since. Inasmuch as the term "sexual psychopath" is not a medical one, the definition of it is associated with differences of opinion among psychiatrists. The courts who act upon the recommendations of the examining psychiatrists have noted these differences, and are properly requesting the establishment of clear diagnostic criteria.

The "sexual psychopath" law in California provides for the hospitalization of a sexual offender if all the following conditions pertain:

1. He has been convicted or has pleaded guilty to some criminal act (the crime need not have been a sexual offense).
2. The criminal offense is not punishable by death.
3. He is afflicted with a mental disorder, pronounced departure from normal mentality or "psychopathic personality."
4. He is *predisposed* to the commission of sexual offenses.
5. The degree and nature of his predisposition is such as to constitute him a *menace* to the health or safety of others.

By carefully examining each of these provisions, it is possible to establish criteria for diagnosis. As in any medical diagnosis, each case must be considered individually and the criteria used as guides in reaching a conclusion as to "sexual psychopathy."

Certification for examination to determine whether a person is a "sexual psychopath" is made when the court finds that there is probable cause for believing this condition exists. Certification may be

- In California sexual offenders apprehended by the law are examined by court-appointed psychiatrists to determine whether they are "sexual psychopaths" as defined by California law and need treatment in a mental hospital. This paper outlines the criteria to be used as guides in properly selecting the persons for treatment.

In general, sexual offenders fall into four categories. The first group consists of persons who cannot maintain proper control over their sexual impulses but whose acts do not constitute them a menace to the health and safety of others. They are not "sexual psychopaths" and their cases should be handled on their legal merits.

The second group embraces persons who have committed a sexual offense on only one occasion and while under the influence of abnormal or unusual environmental stress. They are not considered "sexual psychopaths."

The third is made up of persons completely out of step with the social culture. They often have long criminal histories or long histories of social maladjustment. They are impulsive in their behavior and not remorseful of their misdeeds. Sexually deviant acts committed by such individuals are often incidental to their general asocial and amoral behavior. They do not suffer from inability to control sexual impulses. Their offenses should be judged according to the legal merits of the case.

True "sexual psychopaths" have deviant menacful sexual impulses and are not able to control them. The vast majority of these persons are those who have committed sexual offenses against children. The California State Department of Mental Hygiene has a maximum security hospital which is charged with the care and treatment of "sexual psychopaths."

made upon the motion of the trial judge, the prosecuting attorney or the defendant. If the defendant has been convicted of a felonious sexual offense involving a child under 14 years of age, certification for examination as a "sexual psychopath" is mandatory. It is also mandatory if the conviction is only for a misdemeanor sexual offense involving a child under the age of 14, provided there has been a previous sexual offense conviction. Persons committable as mentally ill or mentally defective will not usually be certified for examination for "sexual psychopathy."

Determination of "sexual psychopathy" is intimately related to the definition of the words "predisposition" and "menace." In general it is accepted

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that an individual has a *predisposition* for the commission of sexual offenses if he has *demonstrated* an inability to control sexual impulses to the extent that these impulses have been acted out repetitively. These sexual offenses are menacing if there is associated aggression or if children are involved.

A review of apprehended sexual offenders indicates that they fall into four general categories. These groups will be reviewed in detail. It will be noted that only one group of the four includes the "sexual psychopaths."

I. Abnormal Sexual Acts Not Considered "Menaceful"

The first group comprises persons who cannot maintain proper control over their sexual impulses but whose acts do not constitute a menace to the health and safety of others.

Many sexual offenses are outrageous to our society yet are not menacing in that they do not inflict any degree of physical or psychic trauma upon others. While persons who commit such offenses do not qualify as "sexual psychopaths" they are often seriously disturbed and are in need of and can benefit from psychiatric treatment. Such treatment may be obtained on an outpatient basis or in a correctional facility, depending upon the disposition of the case by the court. Offenders of this kind are not committable to a state hospital as "sexual psychopaths." Examples of the offenses are homosexuality with adults where the relationship is a voluntary one, transvestitism, voyeurism, exhibitionism or indecent exposure when the victim or aggrieved is an adult, fetishism, pornography, coprophilia, bestiality, and cunnilingus, fellatio or sodomy between adults on a voluntary basis. It should be carefully noted that if any of these acts involve children, or if they are associated with aggression, they should be considered menacing and the perpetrator classified as a "sexual psychopath" if he is predisposed in this manner.

II. Not Predisposed to Commission of Sexual Offenses

The second group comprises persons who have committed a sexual offense on only one occasion and while under the influence of abnormal or unusual environmental stress.

Occasionally when a person is apprehended for a sexual offense, careful history and psychiatric evaluation will reveal that this is the first and only sexual offense and that there is nothing in the personality structure to indicate he is likely to repeat the offense. An example is a person whose main motivation in the sexual offense is curiosity. One of the authors had opportunity to examine an 18-year-old boy, substantially normal in all respects, who was left in charge of a six-year-old girl, as a baby sitter. During the course of the evening, while play-

ing with the girl affectionately, his curiosity in her genital region became aroused and he put his finger in her vagina. The girl related the incident to her mother, and the boy was apprehended and examined as a "sexual psychopath." He was deeply remorseful for his act and could not understand why he had done it. There was no evidence of retarded psychosexual development or uncontrollable sexual impulses. No serious mental or personality disorder was ascertained. He was found to be not a "sexual psychopath" and it was recommended to the court that he be seen by a private physician for counseling and follow-up.

Another instance which characterizes individuals in this group is that of a 63-year-old widower who had led an exemplary life and who married a 33-year-old divorcee. Apparently his young wife did not marry him for reasons of love, and she ridiculed his sexual efforts as not being satisfactory to her. He subsequently became involved in the genital fondling of his 13-year-old stepdaughter, who was affectionate toward him and with whom he spent considerable time alone. This represents a rather unusual circumstance, combining the factors of rejection by his young wife, considerable time spent in the company of a young girl, and seduction on the part of the girl. The man was deeply remorseful for his act and at the time of the interview had gained some insight into the situation which stimulated the sexual offense. He was found not to be a "sexual psychopath."

III. Incurrable Sociopaths

This group consists of persons who are completely out of step with our social culture. They are always in trouble, benefiting neither from experience nor punishment and maintaining no real loyalties to any person, group or code. They are frequently callous and hedonistic, showing pronounced emotional immaturity with lack of a sense of responsibility and lack of judgment, and an ability to rationalize their behavior so that it appears warranted, reasonable and justified. Sexual offenses committed by such persons are often incidental to their general asocial and amoral behavior. They do not lack ability to control sexual impulses as much as they lack ability to control antisocial or immoral impulses. They are not "sexual psychopaths" and their offenses should be judged according to the legal merits of the case. They should be committed to correctional facilities when indicated.

IV. The "Sexual Psychopath"

The true "sexual psychopaths" cannot control their sexual impulses. The resultant sexual acts by these persons, most of whom have committed offenses involving children, are menacing to society.

However, any sexually deviant act, whether involving child or adult, where aggression or force is applied renders the act a menacing one, and the person committing the act should also be classified as "sexual psychopath" if the predisposition exists.

Occasionally difficulties will arise in determining whether the victim should be classified as a child or an adult. In a medical sense, a person who has reached the age of 16 years is considered to have attained his full intellectual potential. At this time he has also usually achieved adult sexual development and mature social and emotional growth. Ordinarily, we would expect a 16-year-old to be in a position to discriminate to the extent that he or she could resist a sexual advance if there were no aggression involved. However, of equal importance for consideration is the past history and personality development of the sexual offender. If there is some evidence that his deviant sexual acts have involved or might involve children under the age 16, he should be considered a "sexual psychopath." Occasionally, the sexual offender's acts are directed primarily toward adults, with the involvement of a 16 or 17 year old person being incidental. This might be true in some cases of statutory rape or adult homosexuality.

Another area of some difficulty in interpretation involves a sexual offender who has had no previous sexual offenses but appears to have recently undergone decided personality change. In such an instance, it may be that even though there has been no previous offense the personality change is of such nature that he is now predisposed to the commission of sexual offenses. In general, however, the most reasonable interpretation of "predisposition" is demonstrated repetitive behavior.

Occasionally, a person may be examined for a deviant sexual offense that would be considered not menacing. However, upon careful review of his history, as well as psychiatric evaluation, it may be revealed that he has in the past committed acts which would be considered menacing. Unless there has been psychotherapy in the interim or some other

stimulus to alter his behavioral characteristics, the previous acts should be taken into account in determining "sexual psychopathy." An example is the case of a person who, although apprehended for adult homosexuality has a history of homosexual acts with children. Such a person would be classified as a "sexual psychopath."

These groupings should serve as guides to psychiatrists in determining "sexual psychopathy." It must again be emphasized that each case should be considered in its entirety and the judgment made on an individual basis. Not only is it important to evaluate the present mental status of the individual, but a case history and review of his criminal record is of paramount importance. All the details surrounding the sexual offense should be known and, if necessary, the victim or witnesses should be made available to the psychiatrist for interrogation.

Psychiatrists and lawyers should be acquainted with Section 5600 of the California Welfare and Institutions Code which provides for the *voluntary* admission of mentally abnormal sex offenders to a state hospital. No one can qualify for admission under this statute who has criminal charges pending against him. A sincere desire on the part of the patient to overcome his difficulty renders the prognosis more favorable.

Atascadero State Hospital, located halfway between San Francisco and Los Angeles, has been designated by the Department of Mental Hygiene as the psychiatric facility to receive and treat "sexual psychopaths." This maximum security hospital was originally constructed to care for the state's "criminally insane." However, more than half its beds are now for persons to be treated as "sexual psychopaths."

Sexual offenders committed to the Department of Corrections often receive psychiatric treatment at the psychiatric facility of that department at Vacaville. Preliminary reports from both Atascadero and Vacaville indicate encouraging results from psychiatric treatment.

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Alcohol Addiction

Problems in Treatment

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ALCOHOLISM, an illness compulsive in character and progressive in its impairment of health, results in serious hardship for the victims, their families and the community. Many investigators have called it the Number One social problem in the nation.

Although the number is very difficult to estimate, there are probably about five million problem drinkers in the United States, of whom at least 750,000 are chronic alcoholics. According to recent California statistics, we are above the national average, especially in the larger cities. San Francisco and Los Angeles lead all cities in arrests per capita for intoxication. In 1953 more than half the arrests were for excessive drinking. Sacramento led with 8,893 per 100,000.

California, with about 125,000 seriously ill alcoholics, has been called the nation's most alcoholized state. Data from the State Department of Public Health show that half the deaths in California from cirrhosis of the liver are due to alcoholism, six times the ratio in other states; and that about 600,000 persons—one of every 14 adults—are rated as excessive drinkers.

Life insurance companies estimate that chronic alcoholism shortens life by two to twelve years. About 25 per cent of family separations or divorces are charged to chronic alcoholism. The annual economic cost and loss of earning power is estimated at one billion dollars. A survey in New York City rates the cost for that city alone at \$200 million a year. Chronic alcoholism accounts apparently for over 10 per cent of the annual 100,000 suicidal attempts in the nation. In many of these cases, use of alcohol is often combined with sedative drugs.

CAUSES

Williams⁴ elaborated the theory that an alcoholic suffers from an abnormal craving because of inherited metabolic fault which causes his body to require certain elements in great excess over the normal. Hence, it was postulated, treatment should be designed to overcome this abnormality by the

- Of about five million problem drinkers in the United States, at least 750,000 are chronic alcoholics, a sixth of whom are in California. Seven phases of drinking patterns are described, from nondependent or "social" drinking, to the last two phases, when blackouts become more frequent and severe, "benders" fade into each other and serious organic diseases appear.

General principles of treatment, after medical diagnosis and psychosocial evaluation, include hospitalization for acute episodes and physical disabilities, use of Antabuse (disulfiram) in suitable cases, psychotherapy, and the use of social aids such as Alcoholics Anonymous. The problem requires all resources available in the community, since chronic alcoholics are never cured and need support for long periods. A cooperative patient can finally readjust himself and get along without alcohol.

Physicians must recognize the seriousness of alcohol addiction and help patients to accept treatment.

administration of at least most of the known essential nutritional factors in excess.

Some evidence on a genetic basis supports this theory. Alcoholism, four times as frequent in family histories of excessive drinkers as in normal drinkers, is associated with the inheritance of an abnormal reaction to alcohol. The effects of the drug are more attractive to these drinkers. The susceptibility to alcohol is often constitutional and akin to allergy, a tendency seemingly inherited by the psychopathic personality. Inheritance is usually through the father or the mother's male relatives.

TYPES OF ALCOHOLICS

The borderline between the so-called social drinker, the problem drinker and the chronic alcoholic is a narrow one. From the medical standpoint, a pathologic drinker is one who commits acts that he rarely remembers or antisocial acts—often violent, uncontrollable and senseless. Such behavior often occurs at the beginning of deliroid or other psychotic reactions. Pathological drinkers are considered to be emotionally ill from the start; later they become physiologically ill from complications

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of alcoholism—they have various disorders of bodily function due to actual toxic effects of alcohol and concomitant metabolic disturbances such as liver, kidney, heart or brain diseases. With repeated bouts of drinking, the person becomes chronically ill, and his psychologic and physiologic reflexes are so conditioned that the patient loses self-control. He is then truly addicted to alcohol.

As with the toxic effects of other chemicals, the higher the concentration of dosage, the shorter the interval before the toxic effect; and, conversely, the longer the time of exposure, the lower the concentration required to produce the same effect. The dose of alcohol and duration of exposure capable of producing disease vary with the individual, depending possibly on inherited or constitutional factors.

The chemical, ethyl alcohol, can directly disturb metabolism and also interfere with metabolism by upsetting nutrition. The result is functional and, eventually, structural changes in cerebral cortex, endocrine system and liver, besides other changes associated with imbalanced nutrition. Malfuction in these organ systems is progressive.

Bell¹ classified seven phases of drinking patterns.

1. *Nondependent or "social" drinking.* The drinker enjoys only the mildest anesthetic effects, and considers alcohol a beverage like tea or coffee. He rarely becomes even mildly intoxicated. In this type of drinking, however long maintained, the exposure to ethyl alcohol does not produce disease in the vast majority of people.

2. *Dependent drinking.* This type of drinking involves personal dependence on certain anesthetic effects, and may be associated with all degrees of maladjustment from mild feelings of anxiety to complete psychosis. Dependent drinking may follow the person's first exposure to alcohol if at the time he is the victim of chronic or periodic states of hostility, tension or anxiety; or it may be acquired later if the anesthetic effect of alcohol is found to relieve anxiety tension states that result from adult responsibilities and frustrations. Even negligible frustrations may lead to a dependent drinking pattern in some persons, because alcohol effectively and quickly reduces emotional states of resentment and frustration.

The nondependent drinker has difficulty in understanding the dependent drinker, and vice versa. The start of dependent drinking should be considered the *first* warning of chronic alcoholism and disease as a possible result. The dependence upon the anesthetic effect of alcohol should be viewed as one-half of craving for alcohol—the potentially controllable half that varies greatly in intensity, periodicity and duration from person to person.

3. *Increase in tolerance.* In time—the period may vary greatly—dependent drinking may become chronic toxic drinking. This stage is the *second* warning that disease from alcohol can result.

Increased tolerance to alcohol probably represents the first effort of the body to adjust to a chronic toxic experience. With continued adjustment to a certain alcohol consumption, the formerly effective blood level of alcohol can no longer meet the individual needs. More alcohol must then be consumed, and the body readjust, and so on until the individual reaches his limit of metabolic adjustment to this toxic experience. He is then a "heavy drinker." For clinical purposes all heavy drinkers can be considered dependent drinkers whose drinking has resulted in increased tolerance. There is no safe way to indulge in heavy drinking.

Since alcohol has not yet produced irreversible metabolic changes, the dependent drinker still retains the ability to eat and sleep. As there is as yet no indication of disturbance in carbohydrate, fat, water or mineral metabolism, there are no sweats, shakes, cramps, lack of appetite or craving for sugar. But the drinker at this stage is forced into a different method of drinking. In order to reach the effective blood alcohol levels demanded by his increased tolerance, he must gulp drinks instead of sipping them. He begins to "sneak" drinks, because most social occasions do not offer enough alcohol to meet his needs. Unfortunately, however, many so-called social drinking occasions today represent mass dependent drinking, frequently with increased tolerance, as seen in the amount of alcohol supplied and consumed by groups of people on many so-called social drinking occasions.

A significant symptom may appear at the end of this phase—the blackout, or temporary period of amnesia about the happenings of the drinking occasion. This may be called the *third* warning, and usually means that disease from alcohol is either present or near. It could be an anoxic effect on the cerebral cortex, as a result of disturbance in enzyme function in cortical cells. The cerebral cortex, the first to be affected by anesthetics, will therefore show the first disturbance in function. The first warning—namely, the beginning of dependent drinking—may have occurred about ten years previously. The appearance of blackout means that in possibly one or two years *irreversible* metabolic changes will begin.

4. *Disease associated with the anesthetic effect of alcohol.* Until this phase is entered dependent drinking can be undertaken and discontinued at will. Then the second half of craving associated with metabolic change is gradually added to the clinical picture. The drinker can no longer easily stop drinking if he wants to, and his drinking usually

ends up in intoxication, but at first only for one evening. Very soon his loss of control extends to a weekend, and the weekend "bender" affects his domestic relationships. At this stage real addiction with irreversible metabolic changes is being established.

The author believes that this metabolic change involves changes in endocrine and enzyme function; evidently the pituitary gland, the cortex of the adrenal gland and the enzymes involved in carbohydrate metabolism are most significantly affected. When these changes have come about, the drinker has reached the point of no return and has the alternatives either to learn to live happily without alcohol, despite his dependence on it, or to go on through the later phases of disease, with ever increasing dependence, both physiologic and psychologic.

From this time on, the continued exposure to alcohol more and more seriously disturbs metabolic equilibrium and it is increasingly harder after a drinking experience to gain a more normal metabolic state. Thus, the drinker begins to meet the withdrawal reaction after drinking.

It is usually difficult to persuade anyone at this phase that he must stop drinking entirely. He has not suffered much from his drinking, it has for years helped to make life tolerable, and because of this dependence the very thought of being forced to live without it alarms him. Persuading him to undertake the effort requires a great deal of tact and patience from the physician.

5. *The phase of "alcoholic thinking."* With the increasing dependence upon alcohol and inability to control drinking, the drinker is forced into intricate rationalizations, alibis and lies about his drinking, called aptly "alcoholic thinking" by Alcoholics Anonymous. In this phase, extending for five to ten years or longer, the fear of facing life without alcohol still exceeds the fear of the results of uncontrolled drinking. Benders extend into the week, solitary drinking begins with attempts at the water-wagon, change of drinking pattern, periods of remorse, extravagant behavior, new resentments.

A most significant development in this phase, the "morning drink," becomes essential when the person can no longer endure the withdrawal reaction and carry on a pretense of normal work. He drinks to maintain an abnormal metabolic state that has now become normal for him. The morning drink should be regarded as absolute proof that all drinking should be discontinued permanently.

Anyone in Phase 5 should be considered to be suffering from a progressive impairment in both cortical and endocrine function. His drinking as a rule impairs his ability to eat, which further aggravates the imbalance in nutrition. Intellectual impairment with poor judgment follows early frontal

lobe involvement. About 50 per cent of the *obvious* abnormality can be considered the underlying personality problem that led to dependent drinking, and the other 50 per cent as related to the chronic toxic effect of ethyl alcohol.

At least by this stage the patient has fatty liver with changes in liver function, usually not advanced to severe cirrhosis. Treatment must begin before intellectual impairment becomes permanent. Often the physician by a calm discussion of developments so far can in one or two interviews get the patient started on a treatment and rehabilitation program. Medical treatment will be according to whatever metabolic disturbances are clinically evident.

If his motivation is poor, the patient may need psychiatric treatment. Physicians should not become discouraged by relapses; frequent relapses occur with diabetic persons and others who are forced into acquiring new ways of living because of an irreversible pathologic condition. Often the wife of an alcoholic will call the physician, but the alcoholic himself will either refuse to see a physician or accept help only to get off a bout. General practitioners usually see alcoholics in Phase 5, 6 and 7.

6. *New fears.* In this phase the fears of continued drinking begin to balance the fears of not drinking. The patient is afraid of his now more severe and more prolonged blackouts, and dreads to answer the door or the telephone for fear of what he may have done. Concerned over his supply of alcohol, he is forced to hide it, and sometimes hides it during a blackout. By Phase 6 the alcoholic himself is looking for help and many will turn up at a physician's office. But new dangers must be looked for, because, without guidance, the patient readily shifts to dependence on other chemicals with comparable pharmacologic effect. He must be carefully steered away from experiencing the effect of barbiturates, narcotics, paraldehyde and bromides, even during the withdrawal period, when possible. It is a wise therapeutic policy to regard sedatives and narcotics as "carrying on from where alcohol left off," not only psychologically, but in the cumulative metabolic effect. For example, an alcoholic *becomes* a barbiturate addict more quickly than does a person who is not addicted to alcohol.

Properly handled, an alcoholic in Phase 6 is an excellent candidate for treatment. A medical examination and medical treatment are by then definitely indicated; pathologic conditions related to alcoholism are more clinically evident than the underlying pathologic condition. The patient should be referred to a psychiatrist, and the psychiatrist should be informed that he is dealing with both personality problems and a chronic toxic disorder associated with a particular chemical. Some psychiatrists do

not appreciate the fact that such a patient can never drink in a controlled manner.

7. *Late phase.* The patient unable to find assistance finally enters this phase. Benders get closer and closer together as he drinks to relieve symptoms of former drinking; he tries to stop and cannot, and the whole experience feels like a headlong plunge into oblivion. Other entities of chronic alcoholism appear in the withdrawal period—delirium tremens, alcoholic convulsions (from organic brain disease, Wernicke's disease, Korsakoff's disease), severe neuritis, cirrhosis of the liver. The patient in this phase should be hospitalized after a bout, but if he is not intellectually deteriorated he can still benefit from treatment. The author found electroencephalography a valuable aid in determining early organic brain disease. The most frequent abnormal electroencephalographic pattern in chronic alcoholism, fast activity in more or less degree, appears before manifest clinical symptoms fully develop, and can be relied upon for diagnosis and prognosis of alcohol brain disease.³ A special study on over 100 cases has been reported.

By the time Phase 7 is reached, the disease the physician first sees is mostly due to the chronic toxic effect of ethyl alcohol, and the underlying disease may only become evident after a considerable period of abstinence. Atrophy of cerebral cortex and liver has been recognized for a long time in advanced cases of alcoholism. In such cases, functional changes have gradually resulted in organic change in these organ systems. Atrophy of the adrenal cortex and of sex glands is frequently noted at postmortem examination of old alcoholics.

GENERAL PRINCIPLES OF TREATMENT

To gain freedom from abnormal dependence on alcohol, an alcoholic must abstain from the use of alcohol, absolutely and permanently. He is never cured because, once an addict, he can never safely drink again, can never become a controlled or social drinker. He can only remain abstinent if a favorable readjustment is effected in his defective personality pattern. Since he has increasingly depended on alcohol for many years, he must expect to take several years to completely free himself of dependency. Physicians caring for alcoholics must recognize this principle and aid the patient in shifting his dependency through better interpersonal relationships, new interests and satisfying achievements as a substitute for alcoholic indulgence.

The first step in treatment is a medical diagnosis—an evaluation of the known diseases that complicate chronic alcoholism. The incidence of these complications is very high. At least a third of the patients dealt with by the author have some organic

disease such as cardiovascular, renal or hepatic disease or organic brain syndromes. These changes can be demonstrated in the patient by successive electroencephalographic recordings. Even though patients with such complications are informed of their serious prognosis, they are especially difficult to treat; many continue drinking and soon die of intercurrent disease or by suicide. Usually prolonged restraint is required to protect them from alcoholic temptation.

The next step is a psychiatric evaluation of the drinking pattern and assessment of the phase of addiction. If the patient drinks only for pleasurable reaction, and drinks enough for anesthetic effect each time, he has become a chronic compulsive drinker—an addict. But if he uses the drinking as a defense mechanism to cover some emotional problem, he may be a symptomatic alcoholic—not yet completely addicted. The primary problem in these cases is to determine whether the psychiatric disorder is neurosis or psychosis. Anxiety states and manic depressive reactions often have an alcoholic overlay.

The next step is a social diagnosis—an evaluation of the interaction between the patient, his employment, his financial situation, his family life and other social factors. Often the prognosis depends upon his security in these relationships and these factors have to be considered in rehabilitation.

Patients may be first observed in any of three conditions: A state of acute intoxication, with a "hangover" syndrome, or in a state of temporary sobriety.

Acute intoxication requires hospital treatment, including psychiatric nursing, intravenous administration of glucose, saline solution and vitamins. This regimen usually brings about a speedy, normal metabolic reaction. An acutely disturbed patient may need such measures as administration of subconvulsive amounts of metrazol, Phenergan (promethazine hydrochloride) and Antabuse (disulfiram) or a sedative such as paraldehyde.

In the hangover stage a similar treatment is carried out with the addition of small doses of insulin and a forced high caloric diet. Prevention of convulsions or delirium or both is an important consideration. In the absence of real preventive treatment, nutritional measures and vitamins aid in speeding recovery. Administration of chlorpromazine and reserpine aids in controlling symptoms but apparently does not prevent delirium. Additional medical therapy may be required for other complications such as liver disease or polyneuritis.

If the patient is temporarily sober, one may proceed with psychiatric diagnosis and treatment of the addiction. If a diagnosis of true addiction in a chronic compulsive drinker is made, the Antabuse

(disulfiram) treatment is recommended if physical condition will permit. While the physical studies are being carried out, attempt can be made to orient the patient to the nature of his illness. He can be given selected reading material to convince him of the seriousness of his illness and of his need for psychiatric and medical treatment. He also can be encouraged to accept social aids such as Alcoholics Anonymous to help him attain full abstinence; and if he accepts, the author asks Alcoholics Anonymous members to call upon the patient, to take him to meetings and begin the long group association that provides a basis for shift in dependence from alcoholic indulgence.

Antabuse treatment. After the preliminary medical and psychiatric evaluation, the author carries out additional laboratory investigative procedures such as electrocardiography, electroencephalography, sulfobromophthalein liver tests (at times others if abnormality is shown) and phenolsulfonphthalein kidney function tests, in addition to routine urine and blood studies. Patients with poor functional results in any of these organs are rejected for treatment with Antabuse, or accepted cautiously as a calculated risk, with the dangers explained to the family. If the tests are within normal limits and the patient is willing, Antabuse is given, 1.5 gm. the first day, 1 gm. the second day, and 0.5 gm. the third day. Then the test reaction is carried out on the fourth day. The test reaction demonstrates to the patient what will happen if he attempts to drink. The test dosage, usually equivalent to 15 cc. of alcohol, is given in whiskey, wine or beer.

After recovery the patient is discharged with a supply of the drug and directions to take the estimated dosage for maintenance—usually 0.25 to 0.5 gm. daily. He is supplied with a card to carry that explains the use of Antabuse and gives the symptoms of Antabuse reaction, with advice to call the hospital if he becomes ill. Follow-up visits for psychotherapy and for checking the drug dosage are arranged, according to the individual case.

The author has observed a few patients who could not tolerate Antabuse. A few had psychotic reactions from too large doses or from preexisting organic brain disease. A few others who inadvertently got alcohol in food—in wine vinegar, for instance—had reactions. Sometimes benzedrine is given at the same time to combat lethargy, or large doses of multiple vitamin preparations may be prescribed. Recently a study of 131 alcoholics, 90 of whom received Antabuse, was reported.² (Forty-one with serious psychiatric or physical complications were not given the drug.) Fifty per cent remained abstinent, 15 per cent were partially successful, about 25 per cent returned to previous drinking patterns

or quit taking Antabuse. Ten per cent did not report and it is not known how they fared.

In a six-year period to the end of February 1955, 250 patients were treated with Antabuse. A follow-up study is now being carried out to determine their present status.

Social education. The author relies greatly on the social aids of Alcoholics Anonymous' cooperation, and in addition an attempt is made to educate relatives and friends to understand the alcoholic's problem and keep us informed of his progress. It is felt that group psychotherapy offers much in the way of handling larger numbers of patients through well regulated programs.

The role of psychotherapy. All alcoholic patients need some form of scientific psychotherapy, but the orthodox psychoanalytic approach is of questionable value. Those patients tend to relapse whenever painful unconscious material comes out. There are not enough psychiatrists to do the tremendous job, so that more superficial methods suffice, often through use of social workers in clinics in group psychotherapy or individual psychotherapy, to alleviate the more pressing problems. However, it is well to emphasize again that the problem requires all resources available in the community: Medical, psychiatric, religious and Alcoholics Anonymous, if greater results are to be obtained; and that all chronic alcoholics need support over weeks, months and years.

Finally, consideration should be given to the proper relationship of psychiatric therapy to Alcoholics Anonymous. All patients with emotional disorders are seeking peace of mind and this is true of most alcoholics. They also have tremendous resentment and defiance against something or somebody which any preventive therapeutic program has to take into consideration. The author's experience is that little can be done for an individual who does not break down and admit his own weaknesses and seek help. An alcoholic usually has to hit bottom before anyone can reach him. As long as the individual maintains the idea of his own ego strength, he is not ready for any type of conversion cure. He must first surrender and accept help, with strong feelings and conviction and admission that he is powerless over alcohol. This concept differs from the average layman's viewpoint of a willful refusal on the part of the addict; and yet we know that this refusal is due to unconscious attitudes. Unless he gives in to this principle he cannot give up his drinking through sheer will power. It takes wholehearted acceptance of his disability instead of halfheartedness and compliance.

The author believes the chronic compulsive drinker's search for pleasure is the basic root of

his trouble. It accounts for his difficulty in honestly wanting to give up drinking. The addict is often relatively infantile in his emotional reactions. His addiction satisfies some inner instinctual drive and he tries to cling to this pleasure achieved by repeated drinking, but he either drinks too much and falls in a stupor or too little and finds himself in painful awareness of reality. He makes endless attempts to reach a state of continuous pleasure that always slips away from him. He keeps up his compulsive type of drinking until he gets into serious social, psychologic or physical complications and has to seek medical and psychiatric attention. Only when he comes to realize that the painful phases of his indulgence far outweigh the length of the pleasurable ones does he honestly desire to quit drinking, with a more normal reaction to his emotional responses. If he really wants to substitute something else more satisfying to him than his repeated alcoholic pleasures he is a favorable candi-

date for either medical, psychiatric or Alcoholics Anonymous therapy.

Prolonged supervision along these lines will enable the cooperative patient to gain insight and gradually enable him to utilize his new aids to a more satisfactory way of living without alcohol. Physicians must change their attitudes toward the disease to one of understanding and a desire to help, if the treatment is to be effective.

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Industrial Injury

A Dynamic Concept for Rehabilitation

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DURING THE PAST DECADE rehabilitation after incapacitating injury or disease has had a tremendous impetus. Medical rehabilitation is not new; it was being done prior to World War II. However, with all due respect to various preexisting facilities for rehabilitation, it must be acknowledged that efforts for the most part were limited to some single aspect of rehabilitation or confined to a given type of disability. Efforts were further restricted by lack of general support and acceptance. The concept of the total rehabilitation program can be said to have become a reality as a result of the program initiated in the armed services and the Veterans Administration. The program initiators, who stood with their feet in the present and their minds tuned to the future, carried the principles back to civilian life, expanded them and made them acceptable.

In a strict definition, rehabilitation is a team approach which utilizes many services, not only medical but social and vocational as well. It is assumed that the person dealt with has a disability of such magnitude that a change of occupation is imperative and that either special training or special equipment is required to make him employable. Consequently rehabilitation centers have been concerned primarily with severe disabilities such as paraplegia, quadriplegia, hemiplegia, loss of limbs, severe poliomyelitis and cerebral palsy. These centers with their total approach are extremely important. They are a must for the severely disabled. Unfortunately there is and has been little offered in cases where it is anticipated the injured person could perform either his previous occupation or some mild modification of his normal employment.

Therefore it must be reemphasized that for every severe injury requiring total rehabilitation there are many injuries requiring only medical rehabilitation. While medical rehabilitation includes the utilization of all branches of medicine, it should be understood the references in this paper to treatment will be confined to restoration by utilization of conservative physical means.

Actually, this communication is a presentation of the theoretical consideration: Should a practical

• Present methods of work capability evaluation are frequently subjective, disputable, and nonobjective. There is inadequate reconditioning especially in cases of older workmen where a return to previous employment under competitive conditions is expected. A "capability evaluation center" is suggested as a possible solution. It should be so organized as to preserve the patient's incentive to return to full production if possible, let him know his potential if less than it was before injury, and help him overcome any tendency that he might have to seek refuge in invalidism.

realistic rehabilitation treatment program be established which will return the injured person to his former occupation, or, failing in this objective, prove he is incapable of performing his former occupation?

Under the existing compensation law it is the obligation of the insurance carrier to provide treatment which will cure or relieve a disability incurred as the result of employment. Theoretically maximum benefit from treatment has not been attained until the patient has been restored to some form of gainful employment and the effect of the injury on the injured person is minimized. Unfortunately both the questions of employability and of maximum benefit from treatment frequently become matters of dispute.

In many instances it becomes the responsibility of a physician to determine whether or not the injured is employable. It is common for the physician to state that the patient can return to work while the patient insists he is incapable of fulfilling the job requirements. It must be recognized that there are numerous extraneous factors which influence these opinions. In many instances these factors are intangible and stem from psychological influences. Some of the psychic influences on the patient are: Feelings of insecurity, fear of discharge for non-performance; fear of a second similar kind of injury; depression from prolonged inertia and defeatism.

Only too frequently the physician's statement of work ability is as subjective as are the patient's complaints. The physician in formulating his opinion may be basing his conclusions upon average experience of similar cases. He may feel the complaints

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are exaggerated, he may actually be biased, or "presurized," in favor of the insurance carrier, or he may be overly sympathetic toward the patient. This is particularly true in borderline cases where it is difficult to evaluate the true extent of disability.

It must be recognized in evaluation that an individual with a given disability may be able to perform under certain working conditions and fail completely in a different working situation. Consequently it is a common experience for him, upon being returned to work, to find himself actually incapable of performing an average day's work.

In disputed cases the patient may be discharged with recommendation of assignment to light work, and all medical and compensation benefits suddenly terminated. In some cases this only serves to lose control of the case as the patient neither receives medical attention nor returns to work. At this point the injured person usually appeals his case to the Industrial Accident Commission and many valuable weeks may be lost while a ruling is awaited. In addition, because of dissatisfaction and stimulation of insecurities, the subjective complaints are increased.

In these questionable circumstances, unless the physician is aware of the total requirements of the work situation and is fully cognizant of the capabilities of the injured person as applied to that particular work situation, it becomes impossible for him to properly evaluate employability. Therefore, in determining when an individual should return to work the physician must estimate and evaluate the following: (1) The individual's subjective complaints, (2) the degree of disability, (3) the nature of the injury, (4) the requirements of the job, and (5) the individual's true working capacity.

From the point of view of the injured person, light work consists of any job that he can perform within the limitations of his abilities, but not being as physically demanding as his normal occupation. Therefore, by nature of this definition light work will vary depending upon the type of injury. For example in the case of a leg injury, light work would consist of any type of activity of the upper extremities, with various degrees of restriction of weight bearing. Another example would be, in the case of an upper extremity injury, work activity requiring the use of the opposite uninjured upper extremity or possibly limited activity of the injured extremity. In the case of back injury it may mean work modifying or restricting the amount of stooping and lifting involved. It is obvious that each situation would have to be considered on the basis of its own merit. If the employer is a large concern which can provide work with a variation in physical demands, the injured person frequently can be fitted into the organization more readily. A small employer may find it more difficult to find suitable activities. The em-

ployer may not be in a financial position, due to competitive factors or because of lack of capitalization, to carry the responsibility of reemployment until the individual is capable of performing a full day's work.

Then there is that other great category of employers who hire by the job. In a situation of this type the employer feels no obligation to rehire the same employees when the job is completed. This is particularly true for construction workers and members of the building trades who are hired by the job. Certainly these employers will not deliberately hire a man for light work. Furthermore, if they find a man is incapable of performing what they consider to be a normal day's work, the man is discharged.

Let us attempt to find out why the conscientious individual fails on attempting to return to work. In the author's experience, the main reasons are:

1. There is no such thing as modified or light work unless the employer desires it. Where there is an understanding employer, the individual may be given an opportunity to gradually adjust to the working situation. This transition to full work has proven to be even more effective if treatment has been continued during the adjustment phase.

2. Improper general reconditioning, especially in cases where there has been prolonged disability. It is a fact that when an injured man has been off work longer than a few weeks he becomes deconditioned. He must be reconditioned to become capable of performing a full day's work. It is a common experience that, in spite of improvement with treatment, upon attempting to work he suffers from increased soreness, generalized fatigue and weakness lasting weeks or even months.

3. Inadequate reduction of disability. A certain percentage of individuals fail on attempting even modified work, and they must be returned temporarily to a status of total disability for a variable period of time, before work is attempted again.

4. Failure of the recognition of the need for modification of the type of employment by the injured himself in instances where there is a degree of permanent disability which prevents him from performing his previous occupation.

5. Failure to carry over medical treatment during the initial weeks of reemployment, resulting in aggravation of symptoms.

Present treatment facilities, no matter how extensive, often fail to recondition properly. In this country they do not simulate true working conditions. Most treatment not only fails to stress function but actually ignores the general reconditioning and work disciplines which are imperative.

The muscles used in work may be different from the muscles injured. The statement that work is the

best treatment is frequently erroneous in that the work load may be excessive and nonspecific and the muscles may decompensate under the load. On the other hand therapeutic exercise for the involved parts does not recondition the body as a whole. Therapeutic exercises can build strength yet not build endurance. What is required is strength and endurance, and this can only be accomplished by a graded program which is specifically designed to this end. This is especially true for older workmen. The prolonged deconditioning is, in some cases, more detrimental than the physical disability resulting from the injury.

In considering this problem a solution could be a center of treatment coupled with a center for evaluation of capability. Distinction must be made between this proposed capability evaluation center and a sheltered workshop. The sheltered workshop takes a person with a fixed disability, such as blindness, epilepsy or cerebral palsy, and fits him into a protective work situation. The job is predetermined on the basis of the disability. The individual receives a given amount of pay, usually either by piece-work or by the hour. These shops are permanent situations and unless the individual voluntarily leaves there is no graduation. This failure to encourage separation from the protected situation is a weakness that should make the use of this unmodified approach unacceptable for dealing with most industrially injured persons.

On the other hand the capability evaluation center could apply the principle of the sheltered workshop plus the purpose of a medical rehabilitation center and have as its basic purpose reduction of disability, the building of endurance, general reconditioning, and capability evaluation. To be effective it is imperative that any program, as suggested, encourage function of the injured parts within the limitations of those parts. There must be job disciplines which approach those of a true working situation. There must be cooperation and consideration both by and for the injured. There must be a willingness and desire for success by the injured and by the administrators. There must be a method of measurement and incentive.

It is undoubtedly true that there are many persons who are capable of two, four or six hours' work, but not of eight hours' continuous work at productive labor. By controlling the work situation, in time and in nature, the individual's work capacity and endurance could be more effectively determined.

From the psychological viewpoint it is important that work should be of a productive nature, for it would demonstrate to the individual that he is capable of gainful employment. Productive work would also serve to reindoctrinate him into a working situation.

Although it is of course impractical to duplicate all types of occupations, if sufficient gradations of work level could be provided and work disciplines maintained, then the program principle would have the prospect of success.

Making this program operative would require the cooperation of the incapacitated person and of the insurance industry.

Some of the stumbling blocks so far as the individual is concerned might be lack of incentive, fear of loss of compensation and fear of loss of rating.

The lack of incentive can be overcome by allowing some additional remuneration for work accomplished. This should be over and above compensation payment. Since work ability would vary, being very low initially and increasing toward normal, it is suggested that it be done on a piece-work basis or on a gradually increasing hourly pay basis, the pay scale being in proportion to normal work accomplished. It would naturally follow that a patient's increase in physical capacity and work tolerance would parallel his increase in productivity and consequently his earning capacity. It would be of paramount importance that in no circumstance could the individual receive the full amount he normally received in employment. Otherwise there would be no inducement to graduate. The supervisory and administrative cost, when added to the patient's additional remuneration, would produce a product at a cost approximating that of normal labor.

There should be an explanation to the injured person of the basis of rating at the Industrial Accident Commission. He should be made to understand that it is not to his advantage to be nonproductive. He should know that he can never recapture his lost wages. He should know that his rating will depend on the degree of permanent disability when his condition is considered fixed and static and not likely to improve. He should be educated to the fact that, if he allows the permanent disability to reach a point where it interferes with his future earning capacity, his loss of earning power will exceed whatever he may possibly gain by his final award.

As a step toward evaluating such a program, a building was constructed utilizing, wherever possible, men over 45 years of age and men with physical disabilities. These men were hired out of the union halls and were paid full union scale wages. They were given the privilege of controlling voluntarily the number of hours they worked each day.

Several conclusions were soon obvious:

1. The average older workman cannot produce competitively against younger men on a full-day basis.
2. The average older man cannot work a full work-day without fatigue, which becomes more ap-

parent as the work week proceeds—particularly if there is considerable physical effort involved.

3. The average older workman frequently refuses to recognize his physical limitations.

4. Because there is no prospect of continuous employment as the job nears the end, there is a tendency to prolong the work by slowing down on the job.

From this experience, it was found that the average older man cannot be hired in a competitive arduous work situation. Older men and men with physical disabilities who follow construction trades can be hired under selected working conditions; they can be hired competitively on an hourly basis provided either the number of hours worked each day or the amount of exertion expended is so controlled as not to exhaust their physical reserves.

If the experience obtained in the foregoing project is a criterion of the ability of men who are actively competing in the open labor market, then it is reasonable to believe it is even more difficult for an older man who has been immobilized for a prolonged period due to injury and has undergone, in addition, deconditioning from lack of generalized activity.

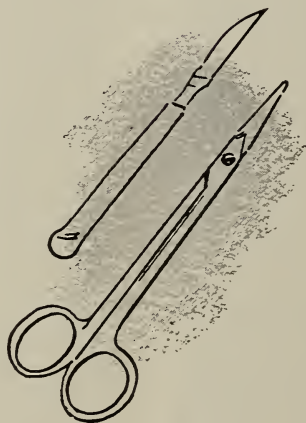
This program of reconditioning then becomes extremely important for the older injured workman and the younger more severely injured workman for the following reasons: First, he has more difficulty

in recovering from a disability. Second, he is less employable in a competitive labor market. Third, he (an older person particularly) is more likely to develop a feeling of insecurity and will subconsciously use his disability as a brace for his own inadequacies.

The proposed program could be used to attempt to return the individual to some form of gainful employment, to increase his earning capacity and capabilities, and give him insight into his abilities. This proposed program is one of capability evaluation. Patients should be selected and should agree to voluntarily participate. The participants should receive some additional remuneration over and above compensation. The total remuneration should not be as great as would ordinarily be earned, lest it reduce incentive to return to normal employment channels.

This program would in effect reduce disability factors in some cases and would serve at the same time to give a clearer picture as to true permanent disability factors in other cases. It would be a visual demonstration to the individual of his own capabilities in terms which he himself can comprehend. It would give a positive medical objective viewpoint as to whether the individual actually is capable of working and of his working capacity. If properly administered this program would give an unbiased approach which would serve as protection to all parties participating.

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Surgical Treatment of Bunions

Distal Metatarsal Osteotomy

W. R. GRANNIS, M.D., A. W. MEIER, M.D., and J. B. TANNER, M.D, Palo Alto

HAVING TRIED many of the surgical procedures customarily employed for the correction of hallux valgus and bunion, the authors are of the opinion that the distal metatarsal osteotomy procedure of Mitchell and co-workers deserves wider recognition. Although the present communication deals with operative treatment, there is no implication of lack of confidence in conservative measures for milder cases.

Until the advent of the procedure described by Hawkins, Mitchell, and Hedrick in 1945, operation for bunions was commonly disappointing to patient and surgeon alike. The more conservative and primarily soft-tissue procedures, such as the McBride operation,^{6,7} while satisfactory for patients with mild hallux valgus and bunions, often were inadequate in more severe cases, as metatarsus primus varus remained uncorrected. Hohmann and others pointed out that the medial angulation of the first metatarsal bone with reference to the axis of the other metatarsal bones, permitting the tendons of the great toe to bowstring across the angle to the great toe, is the primary deformity in hallux valgus with bunion.

Arthroplastic operations on the metatarso-phalangeal joint of the great toe for the correction of hallux valgus and bunion, such as the Mayo and the Keller procedures, while suitable when indicated (as in the case of hallux rigidus or advanced degenerative arthrosis of the first metatarso-phalangeal joint) are not cosmetic procedures and in addition they result in weakness and limited range in the active motion of the joint. In younger patients in whom, despite severe deformity, severe degenerative joint change has not yet developed, a destructive procedure is to be avoided.

Lapidus reported a procedure in 1934⁵ for the correction of metatarsus primus varus, the principle of which, it is generally agreed, is sound. The operation is relatively formidable, however, as remodeling and arthrodesis of the first metatarso-cuneiform joint is required, and frequently in addition it is necessary to do an exostectomy and plastic procedure at the site of the bunion.

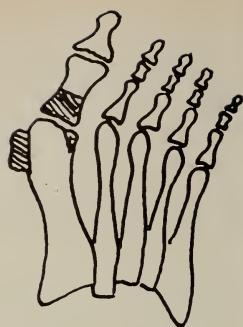
• The operation of Hawkins, Mitchell and Hedrick for the correction of metatarsus primus varus, bunion, and hallux valgus provides an eminently satisfactory solution both functionally and cosmetically. The procedure is applicable to any degree of deformity. Gratifying results were obtained in 43 operations on 25 patients.

Joplin⁴ advocated the use of a sling across the plantar aspect of the metatarsal necks, using the extensor communis tendon of the fifth toe to narrow a splayed foot and incidentally to correct metatarsus primus varus. This extensive soft tissue operation has been noted to produce variable results.

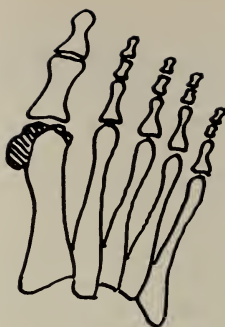
The authors, operating separately at the Palo Alto Medical Clinic and using the procedure of Hawkins, Mitchell and Hedrick in a combined series of operations on 43 feet (25 patients) in a period of three years, obtained gratifying results. Most of the patients operated upon in the closing year of the period had been referred by others who had had the operation earlier.

The technique closely followed that of the originators of the operation, who said that they evolved it from the earlier procedures of Hohmann and of Peabody. The operation begins as that described by Silver:⁹ After a curved dorsomedial skin incision, a medial "V" capsulorrhaphy is made. This extends from the superior and inferior aspects of the metatarso-phalangeal joint, pointing proximally beyond the border of the exostosis. This triangular flap is elevated from the point and off the exostosis to the joint. The exostosis is then removed with a sharp osteotome, with care taken not to damage the articular cartilage of the metatarsal head. Two vertical drill-holes are then made through the metatarsal neck, which has been subperiosteally exposed without denuding the soft-tissue attachments from the metatarsal head. These drill-holes are placed near the medial aspect of the bone, one of them one-half inch and the other an inch from the joint. A loop of heavy chromic suture is passed through the holes, and midway between them a double transverse osteotomy is done with the saw cuts no more than one-eighth of an inch apart. An oscillating power saw is used for osteotomy. The more distal cut extends from one-half to three-quarters across the

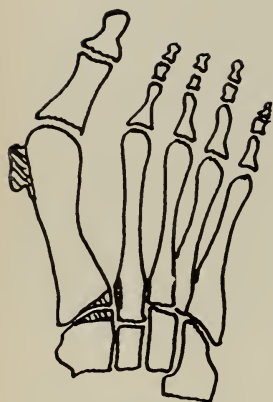
Presented before the Section on Orthopedics at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.



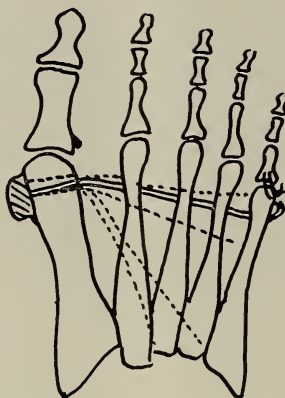
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MAYO



LAPIDUS



JOPLIN

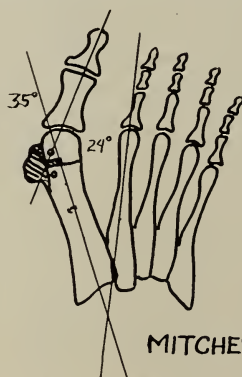


MC BRIDE

Figure 1.—In the above diagram, bone excised is indicated by cross-hatching. The dotted line indicates the adductor hallucis muscle. The extensor tendon of the fifth toe is represented in the Joplin operation.

bone, greater correction being obtained by a shallower cut. The more proximal cut extends across the bone. The bone wedge between the cuts is removed and the metatarsal head is then displaced laterally and the osteotomy is secured by tying the chromic ligature. The lateral spur created by the double transverse osteotomy prevents displacement medially. It is then simple to hold the great toe in a position of slight overcorrection, which is maintained by suturing the "V" capsulorrhaphy flap in a slightly proximal position. The authors have neither lengthened the extensor tendon of the great toe nor done a sesamoid operation, but perhaps this would be warranted in an occasional case. Concomitant deformities of the distal foot or small toes can be corrected at the same operation.

Padded tongue-blade splints were used to support the operative site until healing of the osteotomy is



MITCHELL ET AL

Figure 2.—The principle of the double transverse osteotomy is illustrated, and the angle of metatarsus primus varus and hallux valgus, uncorrected and corrected, is indicated.



Figure 3.—Preoperative and early postoperative radiographs of a representative case in this series demonstrate the operative correction and the position maintained by tongue-blade splints.

secure—usually for a period of six weeks. The patients were ambulatory—with their splints in place—by the third or fourth postoperative day. Mitchell now uses walking casts postoperatively, but the authors found tongue-blades to be adequate and comfortable for the entire period of postoperative splinting. The dressings had to be changed, however, about every ten days. An incidental observation was that clawing and lateral deviation of the small toes diminished progressively following correction of hallux valgus.

The criteria of the originators of the operation and of Hammond² were followed in the selection of patients for this procedure: If the angle between the first and second rays of the foot is nine degrees or more, as seen in weight-bearing anterior-posterior radiographs of the foot, progressive deformity and degenerative change at the first metatarso-phalangeal joint is considered inevitable and the operation is indicated. As the procedure spares the joint, it is of course necessary that the articular surfaces of the joint be at least fairly well preserved. If they are not, as observed at operation in a doubtful case, a Keller procedure can be performed after removal of the exostosis and exposure of the joint.

Hammond² suggested that the operation may be used prophylactically in the case of a young person with severe deformity, even before the advent of significant symptoms, as such symptoms can be anticipated with certainty if deformity is severe. The authors agree with this view, for the procedure has been found to be entirely dependable functionally and desirable cosmetically. Also it relieves the patient of great difficulty in finding shoes tolerable to wear.

Only minor complications occurred in the present series. Despite the fact that in some of the cases the first metatarsal was congenitally short and the operation caused a little further shortening, the complication of increased pain referable to the more lateral metatarsal heads was not encountered. Mitchell recently informed the authors that in the experience of his group this complication is prevented by avoiding any dorsal angulation of the distal fragment at the osteotomy site.

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Symmetric Lividity of the Soles as Seen in Private Practice

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THE TERM *symmetric lividities of the soles of the feet* was coined by Pernet¹⁵ to describe a symmetrical eruption occurring as bluish-red patches. The patches were slightly raised and had "an edematous, blebby look but contained no fluid." Hyperhidrosis was present. The central area was paler than the rest of the involved sole. No mention was made of the peculiar acrid odor so characteristic of the condition. Even though symmetric lividity of the soles is not always symmetrical, is not always limited to the soles, and is more often erythematous than it is livid, the term is generally descriptive and it serves to differentiate the condition from other types of erythema and hyperhidrosis. Symmetric lividity of the soles was a cause of considerable morbidity in the military services during World War II. It is not as rare in civilian practice as the small number of reported cases would indicate. From a study of the records of 37 patients observed in private practice the following observations are made of the condition as it occurs in the civilian population.

All patients in the series had plaques of soggy hyperkeratosis surrounded by well-demarcated erythema or lividity. Hyperhidrosis was pronounced. Bromhidrosis was present except in an occasional case of only one or two days' duration. Tenderness of the involved areas, particularly upon arising in the morning, was common. Although the pressure areas of the soles and the adjacent sides of the feet were the usual sites, occasionally the dorsa of the toes were affected and in one patient the palms and flexor surfaces of the fingers as well as the soles were involved. In three patients the condition was unilateral. Patients who had had the condition for any considerable period said that the severity varied from time to time, and some patients reported periods of complete remission. Of the 37 patients, only five were females. The age of onset varied from three months to 58 years. In most of the cases the symptoms developed before the patient was 30 years of age (Table 1).

Eighteen patients had had the condition less than a year at the time they sought medical attention, while in six the condition had been present for over

- As seen in private practice, symmetric lividity of the soles is a relatively common condition which occurs predominantly in males in the first three decades of life.
- Untreated, the syndrome may persist for many years or it may be self-limiting, lasting only a few days.
- Occupation does not seem to be a factor predisposing to symmetric lividity of the soles.
- There is a high incidence of family occurrence of this condition.
- Any form of treatment which controls the hyperhidrosis controls the other symptoms of symmetric lividity of the soles.

ten years (the extremes: one day and 25 years) (Table 2).

Ten patients gave a family history of symmetric lividity of the soles, while two additional patients had a family history of hyperhidrosis only.

Among the patients in the series occupation seemed to be unrelated to the condition. Since the majority of the patients were of student age when first seen, "student" was the most common "occupation." Other occupations noted were those of mechanic, laborer, physician, accountant, trucker, telephone operator, clerk, nun, gardener and circulation manager.

No systemic disease or condition which could contribute to or cause the syndrome was noted. In spite of the chronicity of the condition in many

TABLE 1.—Age at Onset in 37 Cases of Symmetric Lividity of the Soles.

Years	Patients
0 to 5	3
5 to 10	3
10 to 15	7
15 to 20	9
20 to 25	5
25 to 30	3
30 to 50	3
Over 50	4

TABLE 2.—Duration of Symptoms in 37 Cases of Symmetric Lividity of the Soles.

Years	Patients
0 to 1	18
1 to 5	8
5 to 10	5
10 to 15	2
15 to 20	1
20 to 25	3

Presented before a Joint Meeting of the Sections on Dermatology and Syphilology, and Pediatrics at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

patients, local dermatologic complications were uncommon. One patient developed a severe infectious eczematoid dermatitis superimposed on a contact dermatitis which was probably due to his shoes. Superficial mycotic lesions were observed occasionally. Plantar corns, plantar warts, and/or some flattening of the arches of the feet were noted in association with symmetric lividity of the soles in some patients.

It is only natural to compare symmetric lividity of the soles as observed in civilian practice with that seen in military practice. In none of the civilian patients did denudation of the involved areas develop as occasionally it did in military personnel. In the armed services the occurrence of symmetric lividity of the soles is perforce among males of the younger age group. The occurrence in civilian life is predominantly among patients of the same age group. While no data are available as to the incidence of the syndrome in the military services, it is the author's impression that it was much more common in the military environment.

Various theories have been advanced as to the cause of symmetric lividity of the soles. None of the theories adequately explains all the cases, particularly the palmar involvement. Pressure and friction,⁶ poor ventilation,⁶ excessive standing or walking,⁷ septic foci, environment, "seborrhic" diathesis and psychoneurosis,¹³ heavy shoes and socks,¹⁰ impervious soles,^{6,7} local cold injury,¹⁷ thin soles,¹ ill-fitting shoes,^{1,6} and nylon socks or stockings² have been implicated as causing or aggravating the condition. The widespread use of nonabsorbent, impermeable synthetic materials in socks and stockings, as well as in shoes, could certainly contribute to precipitation of the condition among the group under study. The importance of these factors is hard to evaluate. Apparently there has been an increase in the incidence of the condition in civilian practice. The widespread use of these materials tends to incriminate them. Carney² noted remission of the syndrome when the wearing of nylon stockings was discontinued. The author observed the same thing but also noted cases which did not respond to such treatment. In World War II, when symmetric lividity of the soles was seen often, the socks worn by American troops were of cotton-wool mixture. The service shoe was of heavy leather with composition sole. The ventilation factor may account for the relative rarity of symmetric lividity of the soles in women since the type of shoe usually worn by women does not allow the collection of perspiration and subsequent maceration.

In light of the fact that 10 of the 37 patients in the present series had a family history of the condition, it may be that hereditary predisposition is of etiologic importance.

The natural course of symmetric lividity is not predictable. No doubt some cases involute spontaneously. On the other hand, some patients have recurrences of the condition and some have symmetric lividity of the soles in varying intensity for many years. Any form of treatment which controls hyperhidrosis controls the other symptoms. Most patients need retreatment at intervals. The author has used 40 per cent formalin solution^{9,16} painted carefully onto the involved areas every three to four days until hyperhidrosis is controlled. An astringent powder was used concurrently. The patient was instructed to change shoes and socks at least twice a day. Cotton socks and leather soled shoes or, preferably, sandals should be worn.¹¹ Other forms of treatment recommended have been application of weak formalin solution,^{4,5,7} tannic acid ointment,⁴ aluminum chloride solution,^{7,14} x-ray,¹⁸ calamine lotion,¹⁵ rest,^{3,13} potassium permanganate soaks^{10,13} or paintings,⁷ salicylic acid powder,¹³ salicylic acid-sulfur salve,¹⁸ alum powders,^{6,10} paraformaldehyde powder,⁴ parasympathetic blocking agents,¹¹ alcohol injections of sympathetic ganglia,⁸ and the avoidance of nylon socks.²

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Colloid Carcinoma Arising in Chronic Anal Fistula

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THE DEVELOPMENT of colloid or mucinous carcinoma in anal fistula of long standing is rare. Sixty-five cases have been reported in the literature. The presentation of another case arising in an anal fistula that had been present for 47 years will serve to draw attention again to this grave complication.

Rosser⁵ directed interest to the relation of anal fistula to cancer of the anal canal in 1934. Skir,⁷ in 1948, collected reports of 50 cases in the literature in which malignant change developed in anal fistula. He was not able to state that in all cases there had been malignant degeneration of benign fistula, but in at least 14 there was a history of chronic fistula of more than ten year's duration, which would seem to exclude antecedent malignant disease. Skir reported, in addition, three cases he had observed in which carcinomatous changes of the colloid or mucinous type developed in fistulas of 10, 30 and 55 years' duration. Two of the patients were negroes. Hill and Smith,² also in 1948, wrote of colloid carcinoma involving the perianal region, rectum and sigmoid colon. They reported three cases that occurred in anal fistulas. McIntyre,⁴ in 1952, reported four cases of carcinoma associated with fistula. Three were adenocarcinoma, a fourth was squamous cell carcinoma. Le Blanc and Thompson,³ in 1952, reported two cases of mucinous carcinoma developing in fistulas, one four years and the other two years after the original fistulectomy. In the same year Stockman and Young⁸ collected reports of a total of 64 cases in the literature and added a report of one case.

It is probable that the origin of the neoplastic glandular epithelium is within the rudimentary anal ducts or within the bowel mucosa itself. Epithelialization by normal epithelium of fistulous tracts has been repeatedly observed, and Rundle and Hales⁶ in discussing the pathologic observations made at operation in one case stated that the neoplasm seemed to grow along the fistulous tract from near the primary opening. Direct infiltration of adjacent tissues by malignant cells with secretion of a mucinous material from the glandular acini occurs. Cystic cavities filled with colloid material may be formed by these slowly growing cancers.

Trimpi and Bacon⁹ said that the mucin may be intracellular or extracellular and that the production

• Mucinous carcinoma arising in chronic anal fistula is a rare but grave complication. Some sixty-five cases are reported in the literature. One additional case in a fistula of 47 years' duration is herein reported. The neoplastic glandular epithelium may arise from the rudimentary anal ducts or the bowel mucosa. Direct invasion occurs along the fistulous tract or adjacent tissues. Numerous cystic cavities filled with mucus are formed in the center of the process while an inflammatory reaction of the host tissue is provoked at the periphery. Hence biopsy material from the center of the process is more likely to be accurate than material from the periphery.

Malignant degeneration in a chronic anal fistula should be progressively suspected under the following conditions: Excessive induration, recurrent postoperative induration, the discharge of mucus from a tract and the findings of mucus-filled cystic cavities at surgical excision.

of mucus may influence the development of the tumor in several ways. Expansion within the tissue spaces, causing stripping up of surrounding tissue fibers by mechanical pressure, may occur. This leads to invasion of venous and lymphatic channels, permitting early local metastasis. Conversely, the accumulation of mucus under pressure in well-formed acini may interfere with cell nourishment or cause tissue necrosis of the cancer, accounting for late metastasis of the lower grade tumors. The host tissues undergo an inflammatory response as a result of the carcinomatous invasion or attendant secondary infection from the bowel. Binkley and Quan¹ described this clinicopathologic phenomenon as "pseudoinflammatory colloid carcinoma of the rectum." They reported six cases, some with fistulous tracts, but did not speculate as to which was the primary disease, the fistula or the carcinoma. They emphasized the characteristics of induration stricture formation, slow rate of growth, little pus formation and the discharge of gelatinous material from fistulous openings. The paucity of biopsy specimens containing cancer cells was typical in the six cases they described. Most of the many biopsied tissues were reported nonmalignant and inflammatory in reaction. This inflammatory reaction may effectively mask the true identity of the disease, keeping the diagnosis in doubt, and the patient's life in jeopardy.

This fact was graphically pointed up by Mc-

Intyre's⁴ series in which biopsy under local anesthesia in three cases revealed only inflammatory reaction in two and nonspecific granuloma in one. Repeat biopsies in the three cases, under spinal anesthesia, were confirmatory of adenocarcinoma in two and of squamous cell carcinoma in one. In a fourth case adenocarcinoma was diagnosed two and a half years after fistulectomy and complete healing. Adenocarcinoma had developed within the scar. Hill and Smith² also observed that colloid carcinoma invaded directly into surrounding tissue and that biopsy from the margin may show only inflammatory reaction of the host tissue. These observations closely parallel conditions in the case to be reported below.

REPORT OF A CASE

An 83-year-old white man, a retired railroad switchman, was admitted to the proctologic service of the San Diego County General Hospital, in April 1950. The chief complaint was of the presence of multiple draining sinuses about the perianal region. Upon inquiry he said that he had had the same disorder since 1903 and he had been subjected to numerous surgical procedures and local treatments without success.

Proctoscopic examination of the lower 18 cm. was done and the bowel was observed to be normal. There were multiple fistulous openings over both posterior buttocks, and all were intercommunicating. The primary opening of the fistulous process was at the dentate margin posteriorly. Barium enema studies and x-ray films of the sacrum and coccyx disclosed no involvement. An x-ray film of the chest was normal. Smears and culture of the exudate showed no tubercle bacilli, amebae or pathogenic fungi. A Frei test was negative for venereal lymphogranuloma. The blood sugar content was 122 mg. per 100 cc. No abnormalities were noted in routine examination of the blood and urine and the result of a serologic test for syphilis was negative.

In May 1950 with the patient under spinal anesthesia, fistulectomy was performed with wide debridement. Innumerable ramifications of the tracts were present and in some areas cystic cavities filled with a gelatinous clear material were evident. Biopsy specimens were excised from six areas. All were reported as showing chronic inflammatory change. The subsequent course of the patient was satisfactory and he was dismissed to the outpatient clinic.

In January 1951 he was readmitted to the hospital because the operative wound had not healed satisfactorily and several areas of induration and of evident abnormal growth had developed. Biopsy specimens were taken from several sites and colloid carcinoma of slowly growing type was reported.

Microscopic examination. The sections from one piece of tissue showed a stratified squamous epithelial lining and, in the underlying tissues, an adenoid tissue characterized by a polypoid hyper-

plasia where the glands were forming large quantities of mucus. The lining cells were tall, columnar and appeared fairly uniform. Sections from a second portion showed a delicate structure of dendritic processes where the epithelium had been lost. These dendroids appeared to be floating in a sea of mucus in which there were a few desquamated cells and many polymorphonuclear leukocytes.

In February 1951, palliative colostomy was done and, because of massive involvement of buttocks and perineum, no attempt was made to remove the disease. The patient regained 15 pounds of weight but died in August of extensive infiltration of the buttocks, perineum and rectal walls.

COMMENT

The possibility of carcinomatous change in anorectal fistulas of long standing should be more widely recognized. Suspected areas are those which show undue induration; induration that does not subside following surgical excision or induration that develops after an apparent satisfactory convalescence. The discharge of mucoid material from the tracts or the detection of small cystic cavities filled with mucus communicating with a fistulous tract is nearly pathognomonic of colloid carcinoma. Since the process is infiltrative into the buttocks and perineum with a circumscribed zone of inflammatory reaction, numerous biopsy specimens must be taken from the center of the indurated area and not in the inflammatory peripheral zone.

While many anorectal disorders can be borne with fortitude without serious impairment of health, the correction of anal fistula should be urged upon the patient in order to avoid this rare but grave complication.

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Nutritional Problems and Blood Dyscrasias In Aging Patients

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ONE HAS ONLY to read the report of the Colloquia on Aging, arranged by the Ciba Pharmaceutical Company¹ to realize that the process of aging is not really understood. Not until a proper understanding and definition of senescence is reached can an ultimatum be delivered on the problems of old age. In the meantime, the community-at-large and physicians in particular face a problem of vast and increasing numbers of older people. It seems agreed that prolongation of life can be of interest only if it is accompanied by a reasonable degree of well-being and happiness.

Young² stated that old age can be looked forward to with assurance only with a measure of good health, financial security, good social adjustment and a receptive environment. Number one on his list of causes of increased longevity is a higher living standard with better nutrition.

A search for facts concerning nutrition and aging is rather disappointing. McCay and others³ showed that the life span of white rats can be much increased by retardation of growth. Sinclair⁴ questioned the wisdom of increasing the rate of growth and maturation of human beings. Much work must be done before the significance of such information can be evaluated.

When recommendations concerning the optimum diet for elderly people are examined, it is noted that they differ from the normal only in some reduction of total calories. The tea and toast routine for old people with poor chewing surfaces is definitely a thing of the past. Freeman² suggested that carbohydrate should supply about half of the total calories, protein 20 per cent and fat no more than 20 to 30 per cent. The author, who has managed rather large numbers of aging patients in 18 years of practice in La Jolla, feels that the best of the vitamins and trace elements can be obtained with a knife and fork—but this is a controversial problem.

What are the characteristics of the nutritional equipment of aging people?

Deficiencies in chewing surfaces are certainly important and somewhat less than half of my patients with dentures are unable to accustom themselves to

• Accurate solution of the problems of aging awaits better understanding and definition of senescence. However, adequate nutrition ranks high on the list of causes of increased longevity and happiness in old age. Optimum diets for aging people differ from other age groups only in some reduction in total calories. The digestive apparatus of older people is adequate except when influenced by pathological conditions.

Hematologic standards are essentially unchanged in aging persons. Proper management of hematological problems in all age groups depends on accurate diagnosis. Aged patients tolerate diagnostic procedures very well under gentle management. Pure nutritional anemia is rare but poor nutrition is an important complicating factor in the management of blood dyscrasias in older people.

them. However, this appears to be a diminishing problem with better tooth and gum preservation and better dentures.

Smooth muscle tone, gastrointestinal motility and gastric emptying time are adequate in older people except as influenced by abnormalities such as circulatory insufficiency, obesity, lax abdominal walls and esophageal hiatal hernias. Constipation and resulting excessive catharsis are not characteristics of old age but merely continuations of poor habits established earlier in life.

Decreases in saliva with a drop in ptyalin content, an increase in mucus content and a decrease in the serous fraction with increasing viscosity occur as age advances. The incidence of achlorhydria increases with age. Secretion of pepsin decreases. Resting trypsin decreases but the response to stimulation is good. Lipase decreases both before and after stimulation. Pancreatic amylase appears to be secreted in adequate amounts. With the exception of the decrease in lipase with possible impairment of digestion and absorption of fat, these changes in enzymes do not seem very important.

In summary, the digestive system in aging people seems adequate except when it is influenced by pathological conditions. Therefore, optimum nutrition does not involve any radical changes in basic dietary concepts.

The only problem is that of a modest reduction in total calories in the less active years and the

¹Presented before the Section on General Practice at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

presentation of food in attractive forms which will not embarrass chewing surfaces and overload the stomach. For example, dietitians with whom the author works have found that meat is often rejected by older people unless it is easy to chew and swallow.

The management of hematological problems in aging patients differs very little from that of other age groups. Hematologic standards are essentially unchanged.

Treatment of hematologic diseases of the aged, as with all others, begins with accurate diagnosis. With gentle handling, older persons tolerate diagnostic procedures very well.

A roentgenologist of wide experience has informed the author that he has never encountered serious difficulty, on the basis of age alone, in preparing patients with castor oil for barium enemas. Therefore, it is indefensible to treat older people with antianemic preparations when a barium enema or sigmoidoscopic examination may reveal a carcinoma of the bowel.

Histamine gastric analysis with a dose of 0.005 mg. of histamine per kilogram of body weight can be done safely in older, nonasthmatic patients if an alcohol test meal does not reveal hydrochloric acid. Pernicious anemia can be ruled out immediately if free hydrochloric acid happens to be present. It is hoped that in the near future the diagnosis of pernicious anemia can be established or disproven in the presence of achlorhydria by the urinary excretion test with radioactive vitamin B₁₂. This will be of great help in patients where ordinary diagnostic hematological findings of pernicious anemia have been spoiled by the indiscriminate use of shotgun hematinics which contain vitamin B₁₂. It should also be of assistance in the rare cases of subacute combined degeneration of the spinal cord with achlorhydria but no anemia.

It is fortunate that very few older patients have acute leukemia and that the majority with chronic leukemia have the lymphocytic variety. This type

may not require treatment for years. When increasing anemia or other symptoms indicate a need for treatment, the judicious use of radiation will produce satisfactory remissions. Steroid hormones are useful when the shortened red cell life span and inadequate platelets become a problem.

The rarer problems of multiple myeloma, monocytic leukemia, lymphoma and the anemias of carcinomatosis and chronic renal insufficiency are difficult to treat but the management of them is essentially the same in all age groups.

Pure nutritional anemia is rare but the complication of poor nutrition in aging patients with blood dyscrasias is an important contributory factor. It should be met with all the skill and facilities at the disposal of the physician.

Atchley⁴ suggested that the total needs of elderly patients might be better served by substituting the word *appraisal* for *diagnosis* and the word *management* be substituted for *treatment* or *cure*. This implies that the medical problems of the aged are often handled differently than the same problems in younger individuals. It does not suggest that the actual principles of medical management are different for any age group.

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CASE REPORTS

Duodenal Obstruction Due to Intramural Hematoma

Review of the Literature and Report of a Case

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ACUTE DUODENAL OBSTRUCTION due to intramural hematoma resulting from blunt trauma to the abdominal wall is very rare, judging from the scarcity of reported cases. The authors found reports of fewer than a dozen cases in the available literature.

REPORT OF A CASE

A 17-year-old boy was accidentally kicked in the epigastrium while playing football. He complained of moderate pain in the upper abdomen, but after resting for a short while he was able to take a shower and go home on a bus. However, he continued to have epigastric pain, became nauseated, and started to vomit.

He was first seen by one of the authors about three hours after the accident. He said that he had only moderate pain in the epigastrium, but he was greatly nauseated, was retching and vomiting. There was no blood or bile in the vomitus. The patient was not in shock, and the color of the skin was not indicative of loss of blood. The temperature was 98.6° F. the pulse rate 80 and the blood pressure 140/80 mm. of mercury. There were no external signs of injury to the abdominal wall. The abdomen was scaphoid and soft except in the epigastrium, where there was a little muscle spasm and tenderness. The bowel sounds were active. Since there seemed no immediate need for operation the patient was observed overnight without medication. The nausea and vomiting subsided and he was able to sleep well through the night.

Over the next few days, pain and tenderness were minimal and the patient was able to take clear liquid but became nauseated and vomited following ingestion of solid food. On the fifth day after the injury, he was given a small barium swallow. Fluoroscopic examination and an x-ray film showed pronounced narrowing of the lumen of the descending portion of the duodenum. The distal portion of the duodenal

bulb was irregular in outline, and a very fine streak of barium went through the descending portion of the duodenum. It was thought that there was a great deal of edema and swelling in the wall of the duodenum and probably intramural hematoma. At this time also there could be felt a small mass in the epigastrium just to the right of the midline. This mass was only slightly tender.

Because it was felt that the swelling would subside in the course of the next few days and that the hematoma would resolve itself, relieving the obstruction, a conservative course was chosen. Wangensteen suction was started and measures were taken to preserve electrolyte balance. However, the expected improvement did not take place and the patient continued to vomit. Operation was done ten days after the injury.

The injury was confined to the duodenum. There was no free or clotted blood in the abdomen and no extravasation of blood or bile in the retroperitoneal area or mesentery. A necrotic looking, egg-shaped mass, six or seven centimeters in length and five centimeters in diameter was found occupying the anterolateral aspects of the descending portion of the duodenum. A vertical incision was made in the anterior aspects of the mass, revealing a partially liquefied clot of blood which had formed in the subserosal space. This had compressed the muscularis and mucosa toward the lumen of the bowel, thus causing obstruction. The compressed portion of the duodenal wall was rigid and of cartilaginous hardness, and the patency of the lumen after the removal of the clot was doubtful. An attempt was made, therefore, to maneuver through the stomach wall and to pass a Levine tube through the obstructed portion of the duodenum, but the attempt was not successful due to the tightness of the obstruction. Although it was felt that the obstruction would relieve itself in time after the removal of the hematoma, it was thought that a short-circuiting operation would insure recovery and make possible a smoother and more rapid convalescence. Therefore a relatively small anticolonic gastrojejunostomy was done.

The postoperative course was uneventful and the patient was discharged from the hospital on the seventh postoperative day. Two weeks after the operation, roentgen examination after a barium swallow showed a well-functioning gastrojejunos-

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tomy stoma, but the duodenum was still obstructed. However, when examined four months later, the duodenum had opened up and there was very little deformity in it. The patient was feeling well and had gained about twenty pounds.

One other patient with proven duodenal obstruction due to hematoma following blunt trauma of the abdominal wall was observed at the San Jose Hospital within the past year—a girl, 12 years of age, who fell off a bicycle and started to vomit with crampy abdominal pain two days later. She was operated upon and recovered.

REVIEW OF LITERATURE

In 1893 Perry and Shaw⁶ found record of a single case of duodenal obstruction due to hematoma among 17,652 autopsy reports and other material available at that time. This case was in a man 23 years of age who died of abdominal injury. Noted at autopsy were "recent clots in front of the pancreas and around the third portion of the duodenum." Also the "bowel was so much compressed and obstructed that it would barely admit a finger; and while the stomach and duodenum were filled with fluid, the jejunum was collapsed and empty."

Strachan⁹ reported in 1920 the case of a man who was caught between two motor cars. At laparotomy it was observed that "the duodenum showed no signs of trauma, but very markedly pushed forward and to the left; distortion was due to a large retroperitoneal hematoma, the size of a large hen's egg, situated over the right psoas magnus. The hematoma was incised vertically and handful of blood clot was removed." The patient made uneventful recovery.

In 1933 Oppenheimer⁵ reviewed the above two articles and added report of another case of duodenal obstruction due to hematoma which, however, was not due to external trauma. He said that the hematoma "may have resulted from the erosion of a small blood vessel incident to acute pancreatitis." The patient was a woman 42 years of age who had carcinoma of the head of the pancreas, cholelithiasis, acute dilatation of the stomach and peritonitis.

Dey,¹ reporting in 1952, mentioned two cases observed in Sydney, Australia. One patient had a clear-cut history of epigastric trauma. In the second case, which was reported in detail, such a history was lacking. A previously healthy girl of six and a half years complained of severe intermittent abdominal pain with vomiting. At operation there were found "hemorrhage into the retroperitoneum and the hepatic flexure of the colon" and "a tense cyst filled with blood clot . . . in anterior wall of the lower portion of the first part and second part of the duodenum." The clot was evacuated and the girl recovered.

In March, 1953, Stirk⁸ reported a case in a nine-year-old boy who had gone over the handle bar of his bicycle. He complained of mild pain, which passed in a few hours. Two days later he was seized with sudden pain in midabdomen and started to vomit. There was no evidence of bruise or abrasion

of the abdominal wall. The patient was operated on about one week after the accident. There was found a large subserosal hematoma involving the second, third, and fourth parts of the duodenum and the first four inches of the jejunum. The clot was removed and the serosa was left unsutured. The patient made a slow but uneventful recovery and was discharged from the hospital six weeks after the operation.

Maglandry and Mathewson⁴ reported the case of another nine-year-old boy who "fell while riding a scooter, bruising his right anterolateral abdominal wall and right costal margin." Next day he began to vomit and complained of pain in the right upper quadrant of the abdomen. The vomiting continued and the pain increased. Upon x-ray examination it was noted there was pronounced narrowing at the second portion of the duodenum, causing partial obstruction. Laparotomy was done about a week after the accident. "The peritoneal cavity contained no free fluid. A moderate amount of retroperitoneal hemorrhage was observed immediately in the right retroperitoneal area. There was considerable subserosal hemorrhage of the duodenal loop. There was subserosal hemorrhage also involving the ascending colon, cecum, appendix, and terminal ileum. The second portion of the duodenum [was] found to be very ecchymotic and swollen to about three times the normal size. . . . A longitudinal incision was made in the wall of the second portion of the duodenum. After incising the muscularis, a large hematoma under tension was evacuated. . . . A sterile Levine tube was passed through the gastrostomy wound through the duodenum into the jejunum." The patient made uneventful recovery, the enterostomy tube being removed on the fifth postoperative day and the gastrostomy wound closing spontaneously about a week later.

Felson and Levin,² reporting four cases in 1954, emphasized characteristic roentgen findings in cases of intramural hematoma of the duodenum. They also mentioned Liverud's article in 1948³ as being the first detailed description of roentgenologic features. Summaries of the four cases follow:

1. An 18-year-old boy was struck in the abdomen during a football game. Three hours later persistent dull pain developed. It slowly increased in intensity and the patient started to vomit. The patient was treated conservatively for a while and then was operated upon the tenth day after the injury. There was a subserosal hematoma 20 cm. in length in the distal duodenum and proximal jejunum. There was also another hematoma in the adjacent retroperitoneal space. Six hundred cubic centimeters of liquid blood and clots was evacuated and the patient made uneventful recovery.

2. A nine-year-old girl had roentgen findings typical of intramural hematoma. She improved on conservative treatment without operation; but her hospital stay was 20 days.

3. A nine-year-old boy fell over a wire and later had abdominal pain, nausea, vomiting and diffuse

abdominal tenderness. Laparotomy was done after diagnosis of acute appendicitis. No abnormality was found in the lower abdomen and the incision was closed. However, the symptoms persisted and x-ray examination five days later revealed narrowing of the descending duodenum and a coil-spring pattern. A duodenal polyp with intussusception was suggested. The abdomen was reopened on the tenth day after the injury. There was a hematoma in the posterior surface of the transverse duodenum in the retroperitoneal space. This was evacuated and the recovery was uneventful.

4. In the case of a 33-year-old man the only possible causative factor was an attack of severe hiccoughs and vomiting two days previous to the onset of his abdominal symptoms. At operation there was found a large egg-shaped subserosal hematoma in the transverse duodenum. The hematoma was evacuated and the patient recovered.

Felson and Levin stated that "roentgen demonstration of an intramural mass with coil-spring mucosal pattern overlying it is a pathognomonic sign of intramural hematoma of the duodenum."

DISCUSSION

One of the most rarely seen causes of duodenal obstruction is simple intramural hematoma resulting from blunt trauma to the abdominal wall. When the trauma is severe enough, it causes rupture of the duodenum in the same manner that scalp laceration is produced by a blunt object hitting the skull, for the duodenum is partly fixed against the spine and the striking object pinches the organ against it. Rupture of the duodenum causes extravasation of bile and blood into the retroperitoneal space, mostly on the right side and into the ascending and transverse mesocolon; and there may also be a collection of air about the right kidney and adjacent retroperitoneal area and along the psoas muscle. When the trauma is less severe or relatively minor, it may cause bleeding either into the wall of the duodenum or into the retroduodenal area, and sometimes it may lead to localized hematoma formation large enough to cause obstruction.

In either case, whether it is duodenal rupture or simple hematoma, there usually is a relatively asymptomatic phase following initial shock and pain. In the former, signs and symptoms of severe intraabdominal injury soon develop and immediate surgical intervention is a paramount necessity. In the case of hematoma, there may be only slight pain and tenderness in the epigastrium and right upper quadrant without signs or symptoms of severe intraabdominal injury. The symptoms of obstruction may be slow in developing. In such cases conservative treatment for a few days may be justified, and some patients will recover without operation. However, when obstruction is complete and persistent, laparotomy should be undertaken. In most cases,

simple removal of the hematoma is all that is necessary. In cases where there may be possible scar formation, either from the actual trauma to the duodenal wall or due to long-standing hematoma, gastrojejunostomy may be indicated.

According to Felson and Levin, x-ray demonstration of coil-spring mucosal pattern is pathognomonic of intramural hematoma. In the case herein reported, that pattern was not present, but very pronounced narrowing of the second portion of the duodenum was observed roentgenographically. Maglandry and Mathewson also reported x-ray findings of pronounced narrowing at the second portion.

Siler⁷ cited a review of 1,183 cases of subcutaneous rupture of the intestines in which 113 or approximately 10 per cent involved the duodenum. The duodenum comprises only a small portion of the entire intestinal tract, but the proportion of duodenal ruptures is very high in relation to ruptures in other portions of the intestines. This is because of its fixed location overlying the spine. And in view of the fact that there is such a large number of cases of blunt trauma to the abdomen in modern industries and on the highways, it seems possible that the actual number of duodenal obstruction due to intramural hematoma may be much larger than the scarcity of reported cases might indicate.

SUMMARY

A case of duodenal obstruction due to subserosal hematoma resulting from a kick in the epigastrium is presented. Laparotomy was done about ten days after the injury and evacuation of the hematoma and gastrojejunostomy resulted in complete recovery. Eleven similar cases reported in the literature are reviewed.

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Amebic Granuloma of Cecum

Report of an Intractable Case

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THERE ARE relatively few diseases that respond dramatically to a therapeutic agent. Some, however, possess such specificity of response that the result is utilized as a diagnostic test. For example, Snell⁷ stated that for every diagnosis of amebiasis made by the finding of ameba in the stool, one is made by a therapeutic trial with emetine. He further remarked that "there is no disease condition which responds to specific treatment in a more dramatic manner." Silverman and Leslie,⁶ in reference to amebic granuloma, added that the outstanding and almost universal characteristic of these lesions is their response to specific therapy. The "rapid resolution of these tumors," they said, "can only be compared with the melting away of syphilitic gummas after exhibition of the iodides." They noted, furthermore, that such granulomas disappear a week to ten days after administration of emetine. Spicknall and Peirce,⁸ in commenting on a review of the literature on amebic granuloma, observed that the great majority of so-called "amebomas" disappeared completely within a month from the beginning of treatment.

The case of amebic granuloma reported herewith is presented for several reasons. First, it is at variance with the usual immediate salutary response to antamebic agents repeatedly mentioned in the literature (complete resolution took several years); second, the unusual opportunity was afforded to observe the slow resolution of the lesion by serial roentgenographic study over a six-year period; and, third, it calls attention of the surgeons and clinicians to a lesion which must be given serious consideration in the differential diagnosis of cancer of the colon.

CASE REPORT

The patient, a 37-year-old veteran, was first admitted to the Veterans Administration Hospital, Oakland, October 3, 1952, because it was thought he might have a liver abscess. In July of 1945, while on military duty in the Philippines, the patient had had bloody diarrhea with fever, sweats, malaise and abdominal pain. He was treated with sulfaguanidine. Improvement took place but some diarrhea remained until the patient was discharged from the army in November 1945. A month later diarrhea became more severe and he was hospitalized at a military institution. At that time *E. histolytica* was found in the stool. He was given emetine, carbarsone and sulfasuxidine, but the record did not show the dosage. Dramatic improvement resulted. A year later diarrhea recurred. A private physician found *E. histolytica* in the stool and emetine was given. The condition improved. During the next six years, diarrhea

recurred periodically and the patient received emetine each time, with improvement. So far as the patient knew, no other antamebic drug was administered. Around Christmas, 1951, an episode of abdominal pain led to appendectomy. The postoperative course was uneventful. A week before the patient was admitted to the Veterans Administration Hospital in Oakland, loose bowel movements again returned, and fever, drenching night sweats, chills, cough and pain in the right upper quadrant of the abdomen soon followed.

Further data received from the Veterans Administration Regional Office revealed that in 1948 a barium enema showed a deformity of the cecum, which was irregular, constricted and presented ragged margins. The same conditions were noted in a roentgen study in 1950. Cysts of *E. histolytica* were found in the stool at that time. The patient's medical record contained note of episodes of rapid heart action and of two attacks of "nervous collapse."

Upon physical examination the patient was observed to be moderately undernourished, apprehensive, and chronically ill. The oral temperature was 100.6° F. and the pulse rate was 104. There was pronounced pain on compression of the right lower rib cage. Tenderness and guarding were noted in the right upper quadrant of the abdomen along the costal margin. The edge of the liver was not felt.

In an x-ray film of the chest, increased markings were noted in the right lower lobe. Fluoroscopically observed, the right leaf of the diaphragm moved only one-third of normal excursion. It was not elevated. A barium enema on October 8, 1952, showed considerable spasm with poor haustration. The cecum was deformed, irregular and greatly narrowed. The roentgenologist's impression was that the patient had diffuse amebic colitis with probable granuloma of the cecum. A barium enema on October 29, 1952, after antamebic therapy, showed less deformity of the cecum.

Leukocytes numbered 19,500 per cu. mm. of blood, with 17 band forms. The hemoglobin content was 14.5 gm. per 100 cc. Serum bilirubin was 1 mg. per 100 cc. There was 12.5 per cent retention of bromsulfalein in 45 minutes. The result of a cephalin flocculation test was negative. *E. histolytica* was present in the stools in great number. Subsequent stools after treatment were all negative for parasites.

A diagnosis of amebic colitis with probable liver abscess was made and antamebic therapy was started. This consisted of chloroquine, 1 gm. daily for two days followed by 0.5 gm. daily for 19 days in two divided doses each day; diodoquin, 3 capsules three times a day (a total of 1.89 gm. daily) for three weeks, and aureomycin, 250 mg. four times a day for ten days. At the completion of this simultaneous therapy, ten daily injections (0.065 gm. each) of emetine were given. Five days after institution of treatment the patient was afebrile and considerably improved. He was discharged seven weeks after entry. A follow-up barium enema study on January 9, 1953, showed further improvement of the conditions

From the Veterans Administration Hospital, Oakland 12.
Submitted April 9, 1956.



(1) Initial roentgenogram in 1948, showing deformity of cecum with narrowing and irregularity. (2) (1952) Study, after intermittent emetine therapy (only). Cecum deformed, narrowed and "conical." Ileocecal valve abnormally patent. Distal colon shows poor haustrations, and fine irregularity suggestive of ulcerations. Interpretation by radiologist: Diffuse amebic colitis and granuloma of cecum. (3) (1953) Improvement, with better filling of cecum, after several courses of adequate therapy. Cecal deformity still present, as is involvement of mucosa of proximal half of colon. (4) (April, 1954) Cecum now fills out normally on air contrast study. No constant defect. Findings essentially normal with resolution of previous granulomatous changes.

noted in the colon, but still considerable deformity of the cecum.

Second admission. The patient reentered March 19, 1953, because of weakness, fatigability and abdominal pain. He did not appear ill on this occasion. There was guarding of the abdomen. The edge of the liver was barely palpable. In the right lower quadrant of the abdomen a moderately tender, slightly irregular and immobile mass was felt.

Chest x-ray films, blood cell counts, sedimentation rate and liver function tests were within normal limits. Several stools were negative for ameba. A barium enema examination showed conditions similar to those of the previous study, again with deformity of the cecum. The patient refused to have sigmoidoscopic examination. Because of the abdominal mass and the persistent barium enema findings, a presumptive diagnosis of amebic granuloma of the cecum was made. The patient was thereupon given another course of emetine and diodoquin, and then a three-week course of chloroquine (same dosage as on first admission). He was discharged April 1, 1953. Another barium enema on May 15, 1953, showed additional improvement.

Third admission. The patient was readmitted July 21, 1953, for follow-up examination. At this time there were minimal changes from before. The abdominal mass had regressed but was still palpable. Another three-week course of chloroquine and diodoquin was given (dosage as before).

Final admission. Admitted again April 27, 1954, the patient said he had a feeling of being "run down," had had dizzy spells and a recent "black-out." In addition, he complained of diarrhea and abdominal pain. The temperature was 98.4° F. The mass previously noted in the right lower quadrant of the abdomen could no longer be palpated. The stools were negative for ameba. A barium enema showed nearly complete resolution of the changes in the right colon. An air contrast study disclosed that the cecum distended normally and there was no constant defect of outline. The conclusion by the roentgenologist was that "findings are now essentially normal, with resolution of the previous granulomatous changes."

It was concluded that the probable amebic granuloma had finally resolved after repeated courses of therapy over a period of several years.

DISCUSSION

Anderson, Bostick and Johnstone,¹ in their text on amebiasis, said that when an ameboma has been in existence for a long time and is secondarily infected with bacteria, fibrosis and distortion of the colon may delay or prevent the disappearance of the mass after antiamebic therapy. In some cases, excision may be necessary. They expressed belief that ameboma is due to repeated amebic invasion plus superimposed bacterial infection. Because of the latter, it has been advised that a broad spectrum antibiotic be added to the usual therapeutic regimen. Other ob-

servers have also noted delayed response of such granulomas to therapy.⁹

Amebic granuloma occurs most commonly in the cecum. It cannot be distinguished radiologically from cancer, giving rise to an important problem, as attested by a number of postoperative deaths in the presence of unsuspected amebic granuloma.^{2,4,5,6,8} A course of antiamebic therapy preoperatively may be life-saving in such cases and should be administered in any case in which the possibility exists. The danger of surgical treatment in amebic disease was first brought out during the disastrous 1933 Chicago epidemic when the mortality rate for intestinal operations in the presence of amebiasis was 40 per cent. Many of the patients were operated upon for acute appendicitis, appendiceal abscess or neoplasm of the colon.

Amebiasis in the United States usually is a chronic, low-grade, dormant disease, often without diarrhea. For the latter reason many cases are attributed to functional disturbance and stools are not examined. In some such cases the proper diagnosis is reached when radiologic examination of the cecum is carried out. Wilbur and Camp⁹ found 21 suspicious cases in a review of 300 barium enema examinations. In 12 of the 21 cases, *E. histolytica* was found in the stools. It was the opinion of these investigators that roentgenologic study of the colon is the most valuable method of finding amebic disease of the colon. The significant roentgenologic changes in the cecum as described by these observers consisted of spasm, dilatation, relaxation, and abnormal patency of the ileocecal valve; inflammatory induration with "coning" and inflammatory tumefactive defects. The earlier changes involved the mucosa, the sharp, smooth character of the cecal walls being replaced by a finely granular, irregular contour of the mucosa. There was often an associated cecal spasm. Wilbur and Camp noted carefully that these changes are not pathognomonic since they may occur also in other inflammatory diseases. Golden and Ducharme³ stated that recognizable deformity of the cecum is likely to be present in over one-third of the cases of amebiasis. They noted that in many cases the initial suspicion of this disease came from the roentgenologist.

SUMMARY

A case of amebic granuloma (ameboma) of the cecum requiring six years for resolution is presented. Roentgenologic studies were of interest, for slow and progressive improvement was shown.

The usual dramatic and rapid response of amebic granuloma to specific therapy may not occur, especially in cases not adequately treated at the outset and in which extensive fibrosis and secondary infection occurs.

Amebic granuloma may simulate neoplasm of the colon. Where suspected, a therapeutic trial with antiamebic agents is indicated before operation, since a high mortality rate is associated with surgical intervention in the presence of amebiasis.

Amebiasis may be suspected on the basis of roentgenologic findings in the cecum. "Coning" is said to be the most suggestive sign.

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Congenital Bladder Neck Contracture In Male Siblings

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ONLY PASSING REFERENCE to bladder neck contracture in siblings is found in the literature. Campbell⁶ mentioned this disorder in twin brothers, but did not give details. The present report describes the salient findings recently observed in two young brothers who were uremic from advanced renal damage due to bladder neck contracture and discusses the improvement in their clinical condition following open surgical correction of the vesical obstruction.

FUNDAMENTAL CONSIDERATIONS

Evaluation of distal urologic conditions in children involves consideration of *congenital, acquired, extrinsic* and *intrinsic* lesions.¹ Obstructive mechanisms noted by Campbell were *urethral meatal stenosis, congenital contracture of the vesical outlet, congenital valvular obstruction of the prostatic urethra, deep urethral urinary blockage by polyp, ureterocele, trigonal curtain, prostatic enlargement* and, of high incidence, *neuromuscular vesical disease*.^{6,7} Burns agreed essentially with that listing and with that order of frequency.⁴ However, he minimized the clinical incidence of urethral valves, noting that these occurred in only three of eighty-one patients reviewed by him and his colleagues.⁴

Bladder neck contracture is three to five times more common in boys than in girls. Other congenital anomalies, either in the genitourinary tract or elsewhere, may coexist with any one or several of these obstructive lesions; most common of these concomitant distal urologic conditions are urethral meatal stenosis and bladder neck contracture.

In 1915 Beer suggested that fibrosis of the neck of the bladder of a young patient may be a secondary change in the spastic sphincter which results from

a fundamental neuromuscular disease.³ Campbell reported verification of Beer's postulate and demonstrated histopathologically that bladder neck contracture develops from submucous fibrosis and smooth muscle hypertrophy, often involved by round cell infiltration.⁶

Symptoms of bladder neck contracture may occur early in life (since excretion of urine starts in the fifth and sixth month *in utero*) or they may be delayed until even the third decade. Urinary frequency, straining to void, dribbling and/or enuresis are prominent manifestations. Protracted, unsatisfactorily explained gastrointestinal symptoms may indicate urinary tract disease. The signs are those of recurrent urinary infection associated with residual urine. Degree of obstruction and upper urinary tract damage are not directly reflected by the quantity of residual urine, which may vary from several ounces to several liters. Only rarely is acute urinary retention the first symptom of an obstructive urological condition. Eventually, systemic features of progressive renal failure, such as anemia, malaise, anorexia and failure to gain weight become predominant clinical signs.

Diagnosis is established by history, by physical examination (vesical or renal "abdominal masses") and by full urological study. Urinalysis, measurement of residual urine, bacteriological culture (with antibiotic sensitivity tests) and phenolsulfonphthalein excretion tests are fundamental procedures to be carried out. Blood tests to appraise uremia and electrolyte balance are required. Intravenous urography will demonstrate the degree of renal, ureteral and vesical damage but it usually affords only inexact information as to location and type of distal urinary disease. Cystography is probably the most valuable radiographic procedure; a voiding cystogram may demonstrate ureteral reflux that might be missed by retrograde cystography alone. Cystourethrography is a refinement advocated by some investigators.⁴ Cystoscopy, necessarily panendoscopy, is most helpful and will usually demonstrate trigonal hypertrophy. The presence of a *bas-fond* is of value in delineating chronic infra-vesical obstruction as etiologic.⁶ Trabeculations are usually absent in

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children and are of little significance in differentiating obstruction from neurogenic disease. Ureteral catheterizations are invaluable, since split-function phenolsulfonphthalein studies and retrograde pyelograms may thus be obtained. The latter may constitute the only upper tract morphological study if renal damage obviates excretory urography. Cystometrograms are of accessory value but are not now widely applied to this problem.

Differentiation of mechanical bladder neck contracture from primary neurogenic disease ("megalo-ureter,"¹⁸ for example, as possibly related to "megacolon"^{11,16}) is of key importance, particularly from the standpoint of therapy. Nonoperative treatment, such as "installment" fillings of the bladder through the urethra for dilatation, or passage of urethral sounds or bougies, is useless. No medication will effect relief of the contracture. Surgical correction is mandatory.

Prolonged drainage of urine may be necessary preoperatively or postoperatively. In-dwelling urethral catheterization is feasible when adequate, but suprapubic cystostomy¹⁶ should be instituted if the drainage technique does not improve renal function. Occasionally nephrostomy must be resorted to prior to definitive surgical treatment. Remarkable anatomical and functional restoration may be gained by operation, even in the presence of advanced urinary tract damage.

Active controversy prevails as to whether open^{5,12,19} or transurethral^{2,7,10,17} resection of bladder neck contracture is better. The former approach has been criticized as "needlessly radical,"²⁶ while the latter has been decried as frequently failing to correct the lesion in a single operation^{5,6} and as excluding the immediate and long-term drainage value provided by cystostomy.⁴ There is general agreement as to the value of nephroureterectomy¹³ for megaloureter^{1,18} or ureteral resection⁹ for hydro-ureter, including that ureteral dilatation noted in association with congenital weakness of abdominal wall musculature^{11,15} or with the rare instances of ureteral diverticulum.¹⁴

REPORT OF CASES IN SIBLING BOYS

Patient A, a six and a half year old white boy of American Indian-Caucasian parentage, entered Mary's Help Pediatric Clinic for investigation of constant urinary leakage, present since infancy, which had led to his expulsion from a rural public school. The patient was accompanied by a younger brother with a similar condition.

Upon examination, the bladder could be percussed up to the umbilicus. One hundred and twenty cubic centimeters of residual urine was removed by catheterization. Excretory urography revealed enlarged kidneys, more pronounced on the right, which excreted the dye very slowly and poorly. The calyceal systems and ureters were not outlined. Hospitalization was arranged but chicken pox supervened. Intractable vomiting for four days necessitated admission to the communicable disease ward of the San

Francisco County Hospital June 5, 1955. The vomiting, and fever of 104° F., were attributed to *E. coli* bacteremia which was present in addition to uremia (blood urea nitrogen was 167 mg. and creatinine 6.8 mg. per 100 cc.). The organism grown in cultures of blood and urine responded within four days to 1.0 gm. of streptomycin, intramuscularly, daily. The patient was transferred to Mary's Help Hospital June 10, 1955.

In-dwelling catheterization was begun at once, and 150 cc. of grossly purulent urine was removed. Achromycin® (tetracycline hydrochloride) 100 mg., was given intramuscularly, followed by Sulfase® (sulfonamide) solution, 4 cc. every six hours. The temperature then ranged from 98° to 100° F. Two hundred cubic centimeters of M/6 sodium lactate was given intravenously just after the patient was hospitalized. Twenty-four hours after admission erythrocytes numbered 3,950,000 per cu. mm. of blood. The hemoglobin content was 9.3 gm. per 100 cc. Leukocytes numbered 11,100 per cu. mm. Serum nonprotein nitrogen was 275 mg. per 100 cc. and creatinine 5.2 mg. per 100 cc., but the serum electrolytes were within normal range. The total protein content was normal. Two transfusions of whole blood, each of 300 cc., were given within the next 72 hours. By June 16, 1955, the nonprotein nitrogen and creatinine, which had declined progressively, had fallen to 80 mg. and 3.5 mg. per 100 cc., respectively. Intravenous urography at this time showed poor concentration of the dye by the kidneys, and only at one hour after injection could the dilated calyces and widened, tortuous ureters be faintly seen. Upon cystoscopy, pronounced bladder neck contracture and hypertrophy of the interureteric ridge were noted. Only the right ureter could be catheterized; pronounced hydroureteronephrosis was demonstrated. The ureteral catheter coiled upon itself in the left ureter and would not progress upward. A cystogram demonstrated right ureteral reflux with pronounced dilatation and tortuosity of the ureter (Figure 1). The renal calyceal system and pelvis were greatly distended, but the margin of renal parenchyma appeared encouragingly wide.

On June 20, 1955, suprapubic wedge excision of the bladder neck contracture and interureteric ridge was performed. A segmental resection of the dilated, atonic anterior bladder wall was done and a surgically created longitudinal defect in the posterior wall was apposed by sutures. Suprapubic cystostomy and in-dwelling urethral catheter drainage were instituted.

Postoperatively, Achromycin® and Furadantin® (nitrofurantoin) were alternated in small doses for a total of five days. The suprapubic tube was removed in four days and the urethral catheter in ten days. Serum nonprotein nitrogen ranged from 100 to 125 mg. per 100 cc. during the uneventful postoperative hospital course. After repeated instruction and encouragement the patient could void 250 cc. voluntarily, leaving less than 15 cc. residual



Figure 1.—Left: Preoperative cystogram in the case of Patient A. Right: Postoperative excretory urogram.

urine in the bladder by the time he left the hospital July 6, 1955.

During a period of six months of observation after operation the patient's general health was good and he returned to school. Urinary continence was almost normal although bed-wetting was reported several times. Monthly clinical and laboratory evaluations were done, including excretory urography on two occasions.

The voided urine was grossly and microscopically normal. No further anemia developed. Nonprotein nitrogen varied from 40 to 67 mg. per 100 cc. The most recent intravenous urogram, January 6, 1956, showed improvement in left renal form and function, although obvious ureteral and calyceal dilatation persisted (Figure 1, Right). Right renal function was considerably delayed and very poor.

Patient B, the five-and-a-half-year-old brother of Patient A, was examined at Mary's Help Pediatric Clinic with his sibling. He had identical complaints and the physical findings were the same. More than 100 cc. of residual urine was removed by catheterization. Upon intravenous urography the kidneys appeared of normal size and shape. However, there was slow and poor concentration of the dye in the calyces, which were greatly dilated. The ureters were not visualized, but the bladder was distended

and contained considerable fluid after attempted voiding.

When the patient was hospitalized, June 6, 1955, nonprotein nitrogen was 80 mg. per 100 cc. and serum electrolytes were within normal range. The hemoglobin content was 9.3 gm. per 100 cc. and erythrocytes numbered 3,850,000 per cu. mm. No abnormalities were noted upon urinalysis and no organisms grew on culture media. In-dwelling urethral catheterization was instituted.

Cystoscopy and bilateral retrograde pyelography were carried out June 8, 1955. Pronounced bladder neck contracture and hypertrophy of the interureteric ridge were evident. The extensive dilatation of the ureters and renal collecting systems is shown in Figure 2. A split-function phenolsulfonphthalein test was useless since no dye was recovered within 15 minutes after intravenous injection. *Aerobacter aerogenes*, in relatively low numbers, was grown on cultures of urine from the left kidney and the organism was sensitive in vitro to Terramycin® and Achromycin.® Orally administered Sulfose® maintained an afebrile state from the time of cystoscopy until operation. Three separate transfusions, each of 100 cc. of whole blood, were given during the week before operation, increasing the number of erythrocytes to 4,980,000 per cu. mm. Serum nonprotein nitrogen decreased only to 65 mg. per 100 cc. despite constant drainage by catheter.

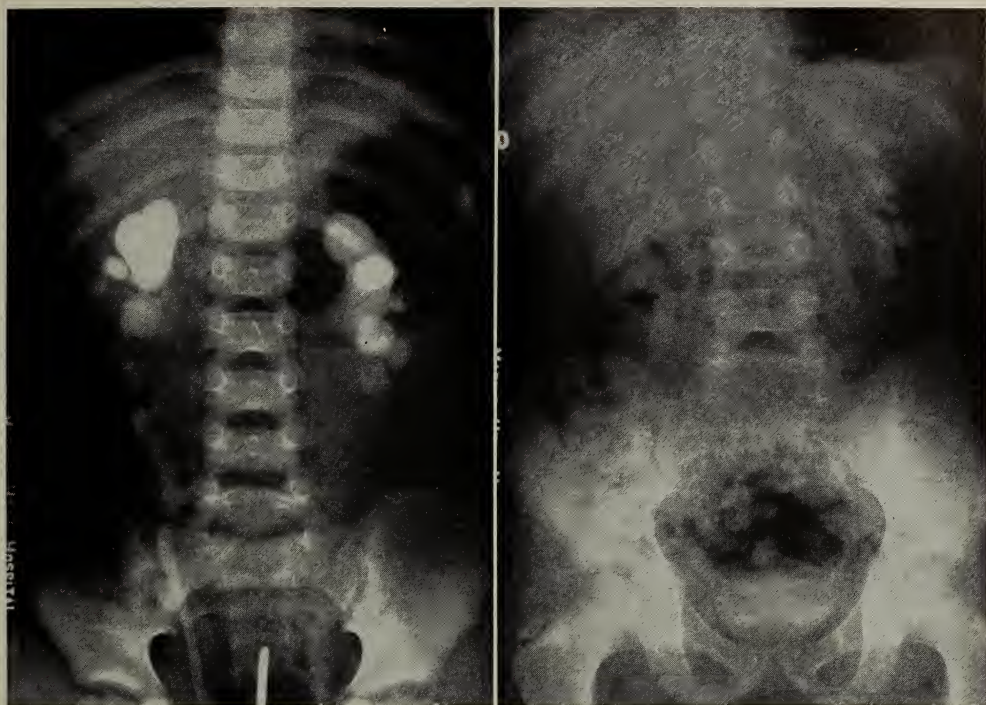


Figure 2.—Left: Bilateral retrograde pyelogram, preoperative, in Patient B. Right: Intravenous pyelogram, postoperative.

Suprapubic excision of wedges of posterior bladder neck, interureteric ridge and thickened, redundant anterior bladder wall was done June 15, 1955 with open drop ether for anesthesia. Suprapubic and urethral catheters were left in-dwelling. Achromycin was given orally (200 mg. daily) for three days, during which time the patient was afebrile. The suprapubic tube was removed on the fourth postoperative day. Within four hours after removal of the urethral catheter on the tenth day, high fever developed. The distended bladder could not be emptied by voluntary or manual pressure. Within several hours a small suprapubic fistula formed and leaked urine. An in-dwelling urethral catheter was reinserted. During the next three days, serum non-protein nitrogen rose from a postoperative level of 32 mg. to a peak of 94 mg. per 100 cc. Aureomycin® and Terramycin® were given intravenously every six hours for 36 hours, after which Dicrysticin® (penicillin-streptomycin) was given intramuscularly for the next three days.

On June 30, 1955, transurethral revision of the bladder neck was done. Very little tissue was removed with the resectoscope. By July 8, 1955, when the urethral catheter was removed, the patient could void upon command, but had to be reminded to do so at regular intervals. It seemed probable that training to empty the bladder, rather than the trans-

urethral operation, accounted for the ability to void per urethra.

Aside from minor acidosis, corrected within four days by sodium citrate solution taken orally, the remainder of the hospital stay was uneventful. The patient was dismissed July 14, 1955, at which time nonprotein nitrogen was 70 mg. per 100 cc. and erythrocytes numbered 4,120,000 per 100 cc. Much of the final week of hospitalization was devoted to teaching the patient how and when to urinate. He was making good progress in this regard when discharged.

Serum electrolyte analysis was carried out monthly after dismissal from the hospital and the results were within normal limits. Serum nonprotein nitrogen decreased gradually to 40 mg. per 100 cc. over a six month period. The blood cell content remained normal. Intravenous urograms showed gradual but incomplete regression of the bilateral hydroureteronephrosis, suggesting some degree of irreversibility.

When last observed, the patient was still in the process of learning urinary control in order to avoid wetting his clothing. He was able to go to school but had to be sent home occasionally for a change of clothing. After such an accident several weeks might elapse before major incontinence occurred again. Bed-wetting at night was common unless the patient was awakened to void every three hours.

The most recent excretory urogram, made November 22, 1955, is shown in Figure 2.

DISCUSSION

Because congenital obstruction of the bladder neck in brothers is uncommon, the other siblings were examined for the presence of unsuspected congenital anomalies. In one, a two-year-old girl, spina bifida was found. No abnormalities in the urinary tracts of the other siblings were noted on gross clinical examination, urinalysis and excretory urography. No congenital defects other than of the bladder were present in the two patients reported upon here.

Several general urological principles are underscored by the conditions observed and the therapy used in these two patients. Diagnosis could have been made earlier, but apparently no physician recommended urological investigation. Numerous investigators^{1,8,12} have emphasized that prompt urological study is imperative in children with persistent urinary symptoms, such as were noted in the present cases, or with chronic fever or gastrointestinal symptoms. Earlier treatment could have been made possible by earlier diagnosis and might well have prevented the progressive renal damage.

Institution of urinary drainage is a prerequisite to bacteriostatic control, as was demonstrated by the negligible effect of antibiotic therapy upon bacteremia in the case of Patient A prior to definitive hospitalization. In this case, urethral catheter drainage sufficed. If necessary, cystostomy or nephrostomy should be done without hesitation. Even more important than overcoming infection, establishing free urinary drainage contributes to dramatic restoration of renal function and renal reserve.

A note of caution should be voiced against unnecessary urethral catheterization or instrumentation once residual urine is detected. Such manipulations hasten development or dissemination of infection and of course superimposition of systemic debility or added renal damage from this cause is manifestly to be avoided. If multiple urethral catheterization is anticipated, in-dwelling catheterization is preferable, even for ambulatory, nonhospitalized patients. In these instances, free drainage to a collecting bag is far better than clamping the catheter and periodically releasing the urine from the bladder. In brief, all measures are directed toward uneventful improvement of renal function prior to definitive surgical treatment.

Curiously, instruction in how and when to urinate was necessary in the present cases. These children were ignorant of urinary function, since overflow incontinence accomplished constant, incomplete urination. Postoperatively, careful training was required to help them to identify the feel of bladder fullness and to inculcate the response of voluntary, conscious voiding at four-hour intervals. In this process, self-soiling was combated, mainly by initiating voluntary gluteal muscle exercises, best visualized for the patient by their momentary stoppage of micturition during that act.

Although surgical relief of bladder neck contracture afforded each sibling imperfect restitution of renal function, it is clear that remarkable improvement occurred. These patients were enabled to live more sanitarily and a longer life expectancy may also be anticipated. Not all patients with bladder neck contracture can be salvaged surgically, but, as Campbell said, "It is only by treating the many that we can help the few."⁷

SUMMARY

Two young brothers examined because of urinary dribbling since birth were found to be uremic from congenital contracture of the bladder neck. Suprapubic wedge-excision of the contractures brought about gratifying improvement of greatly depressed renal function. Instruction in how and when to urinate was necessary after operation.

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EDITORIAL

Medicare

MEDICARE, a new word in the medical lexicon, is the coined term to describe the new program of the Department of Defense for providing medical and hospital care for the dependents of military personnel. While such care has traditionally been provided by the armed forces since 1818, various obstacles such as lack of clear legal responsibility and authorization, location of many dependents at a distance from military hospitals and other factors have operated to prevent a complete and suitable program for those who might be considered eligible for benefits.

The Congress earlier this year adopted, and the President signed, Public Law 569, which provides that such care will be given to military dependents, either through federal establishments or through private sources.

Under the terms of this law, many California physicians may soon find themselves with patients who otherwise might have gone to military hospitals or have foregone needed care.

Our peacetime military establishment totals about 3,000,000 men, who are estimated to have about 2,000,000 dependents. The latter figure is strictly an estimate and may run considerably higher when and if an accurate tabulation is made.

Government sources estimate that about 40 per cent of the dependents, or about 800,000 persons, are not able today to obtain medical care because military hospitals are not available. Under the new law, it is hoped to make medical and hospital benefits to these dependents uniform throughout the land, regardless of whether military or civilian facilities are used.

Further estimates show that with few exceptions our military men have incomes of less than \$7,000 annually, and that 63 per cent have annual incomes, including base pay and maximum allowances, of less than \$3,300 annually. If this number is included

with the next higher income bracket, an estimated 82 per cent of all military personnel receive less than \$4,300 a year.

From these figures it is readily seen that the military dependents fall within or close to the income brackets normally used in service-type voluntary health insurance programs such as California Physicians' Service.

Under the Medicare program, military dependents will receive virtually complete medical, surgical and hospital coverage. Included in the program will be complete obstetrical and maternity care, hospitalization up to 365 days for each admission, treatment for medical and surgical conditions, treatment for contagious diseases and medical-surgical care for accident cases.

This entire program will be administered by the Department of Defense, which has taken a realistic attitude from the very start on the matter of dealing with private physicians and private hospitals. Spokesmen for the Defense Department have made it clear in their meetings with physicians and hospital representatives that they want to utilize private facilities in a normal manner, that they want the military dependents to have free choice and that they expect to pay reasonable fees for the private care provided.

This is a rather far cry from earlier experiences with the Veterans Administration, where the California "home-town" medical care program has had to overcome numerous obstacles apparently placed in the way of C.P.S., as the administrative agency, by governmental employees who would prefer to see the plan handled by the VA itself. In California it was long ago decided that C.P.S. was the physicians' own organization and the one body which could be counted upon to handle the VA program with the physicians' interest in mind.

Under the Department of Defense plans for Medi-

care, California Physicians' Service will again be called upon to serve as the administrative agency in this state. Its operating machinery and its know-how both in providing needed services and in handling administrative details will be a boon to California physicians participating in the program.

Fortunately, the attitude of all Department of Defense representatives to date has been one of enlightened cooperation. The Department has asked the state medical associations to name their own administrative agencies. It has asked them to suggest proper schedules of fees for the various services anticipated. It has asked them to name advisory committees to counsel with governmental representatives in achieving optimum results. It has stated publicly its desire to keep red tape to the minimum.

On the basis of Department of Defense announcements to date, it is reasonable to expect a smooth operation which will provide a maximum of benefits to the maximum number of beneficiaries, on the basis of fair fees and minimum red tape.

California physicians have been well represented in all the planning stages of this program. The Council of the California Medical Association has named a special committee to represent it in this program,

and full reporting has been provided. The C.M.A. has, further, been signally honored in having had its Relative Value Studies used as the basis for the setting of medical, surgical, pathological and x-ray fees for this program. The unit values stated in these studies may be readily converted into dollars and cents by the application of a dollar factor for each section of the studies. While this dollar factor may vary from one area of the country to another, the relativity of fees may easily be maintained and all parties concerned assured of fair treatment on the question of fees.

Medicine has a splendid opportunity under the Medicare program to show how medical care can be provided by private facilities for a large number of civilians who are essentially governmental wards. Under proper medical administration, the private physicians have opportunity to give their best to many citizens who have heretofore accepted whatever was offered, if anything. If medicine comes through as anticipated, it is obvious that the Department of Defense objective in making medical and hospital care uniform throughout the services and thereby building up military morale will be well realized.



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Care of the Patient With Advanced Cancer

INTRODUCTION

THE CANCER COMMISSION of the California Medical Association has prepared this article on the care of the patient with advanced cancer, to help the attending physician to meet his responsibilities by bringing together in this article the various methods which are of assistance in such situations. It is realized that much that will be said is not new; and that all methods may not have been included; it is hoped, however, that the material present will act as a stimulus and point out avenues of approach in the handling of these patients.

THE ATTENDING PHYSICIAN'S RESPONSIBILITY

The physician who undertakes definitive treatment of cancer in any patient immediately assumes certain definite obligations to his patient. First, after completion of the initial treatment he should have his patient return to his office for periodic examination and observation, to be certain that there has been no return or spread of the cancer he has treated. Secondly, he should be prepared to institute prompt treatment if the cancer does recur. Finally, he should be willing to accept the heart-breaking chore of the care of this patient in the event that far spread metastasis develops.

In the actual care of the patient with advanced cancer there are certain basic responsibilities:

1. *The maintenance of morale in the patient and family.*

To do this adequately and properly the physician should practice a form of psychotherapy. Or, as it might be expressed, this portion of the patient's care is based on the art rather than the science of medicine.

Avoid at all costs giving the patient the idea that nothing further can be done to check the course of his disease. Always hold out, in some manner, a

hope to which the patient can cling that something of value can be done. Such assurance may aid in making his terminal illness a meaningful and bearable experience instead of one of terror and abandonment.

Do not limit his activity; keep him a productive member of his family and society for as long as possible. Let the patient be as active as he desires and actively encourage him to continue his normal pursuits as much as he can.

Never hesitate to suggest the possibility of consultation. This will strengthen the patient's belief and the family's belief that you are doing everything possible to help him. It will give him, and you also, the opportunity to discuss with other competent individuals the problem with which all of you are faced.

Never, under any condition, abandon the patient. It is not the fear of death, but of dying, which is almost universal; if to this is added a sense of being abandoned, the patient may become terror stricken.

2. *Make the prognosis clear to some responsible member of the family.*

Be sure that the whole problem is discussed and that all of the various avenues of care are outlined.

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Discuss the possibility or advisability of consultation. Guide the patient into putting his or her personal affairs into proper condition.

3. *Use any and every available method to slow the progress of the disease.*

This should *not* be done to prolong a painful, miserable existence, but rather in the spirit of keeping the patient comfortable and useful.

4. *Keep the patient as free of discomfort as possible through the use of mild narcotics, stimulants and euphoria producing drugs.*
5. *Explain to the patient and the family the problem of cancer quackery.*

The patient with incurable cancer is prey to many individuals, and he and his family will be subjected to much advice as to various "cures." The attending physician should not hesitate to discuss cancer quackery frankly. He may do well to tell the patient and the family that he stands ready to give quite candid advice as to any so-called cure they may hear about. It is only by a very factual approach that we can prevent these people from falling into the hands of the quacks.

METHODS OF TREATMENT OF ADVANCED CANCER

Surgical

Many patients with incurable cancer can be benefited by a properly planned surgical procedure. The measure of whether or not the procedure is worthwhile is not based on its being either a simple or complicated procedure, but rather on the simple factor of "Is the patient going to be relieved of discomfort and distress and enabled to live a more comfortable life?" Following are some examples of operations which can bring marked benefit in the instances cited.

1. *Ulcerating, fungating lesions.* Ulcerating, fungating lesions of the skin, breast or elsewhere, whether primary or secondary, can sometimes be widely excised and covered with a skin graft. This may relieve the patient of several problems: The foul smelling growth; the debilitating effect of a secondarily infected draining area; the visual presence of the threat to his life; and, in some instances, pain.

2. *Respiratory obstruction.* Nothing could be more distressing than the sense of slowly strangling to death and of fighting and struggling for each breath of air. Tracheostomy should often be performed in patients with a respiratory obstruction. It will bring with it immediately a tremendous improvement in their sense of well being and their general outlook on life. They should have thorough instruction in the care of the tracheostomy tube.

3. *Intestinal obstruction.* Large bowel obstruction should usually be relieved. If possible, the lesion should be resected and an anastomosis performed—even though the disease is advanced and incurable. In addition to relieving the obstruction, it also removes the ulcerative, necrotic, infected, and usually bleeding growth. The avoidance of the colostomy under these conditions eliminates one more problem for the patient and family. If the lesion cannot be resected, or if it can be resected but anastomosis is not possible, then colostomy, of course, can be performed. Both patient and family, then, should be instructed in the care of the colostomy. The bad name which colostomies have received is usually due to improper care; this, in turn, usually is due to inadequate education of patient and family. It is much more desirable to do a short-circuiting operation and anastomose ileum to colon, and construct a cutaneous mucosal fistula than it is to do a cecostomy.

Obstruction of the small bowel is in a different category. Often very little can be done in these situations because the obstruction is produced by extensive carcinomatosis. However, in some instances a single lesion or two lesions will be producing the obstruction, in which event resection and anastomosis will relieve the obstruction and be productive of comfort.

4. *Urinary tenesmus.* Carcinoma of the bladder often produces severe urinary tenesmus and frequency. When the growth cannot be controlled by either transurethral resection or radiation, and when tenesmus and frequency become a problem, consideration should be given to ureteral transplant to the large intestine. The symptomatic relief often afforded by this procedure makes it well worth while.

5. *Urinary obstruction.* If this is due to carcinoma of the prostate, it is frequently relieved by transurethral resection. This procedure would seem preferable to a permanent catheter or a cystostomy.

6. *Jaundice.* When a neoplasm totally obstructs the common duct the resultant jaundice is usually accompanied by anorexia, sometimes pruritus, and at times the symptoms of cholangitis. The obstructive jaundice will not, of its own accord, produce a rapid death. It is desirable, in most instances, to relieve the jaundice by anastomosing either the gallbladder or common duct to some part of the small intestine. If this is not possible and the patient has pruritus, it may be desirable then to place a drainage tube into some portion of the hepatic tree and establish an external biliary fistula.

7. *Ascites and pleural effusion.* Massive pleural effusion produces a variety of discomforts, the

most prominent of which is dyspnea. Repeated tapings will remove the fluid and temporarily relieve distress. In many instances the rapid accumulation of fluid can be relieved by x-ray therapy, the instillation of radioactive isotopes or nitrogen mustard, HN_2 . The latter procedure sometimes is the more easily applied. After as much fluid has been withdrawn as possible, sufficient nitrogen mustard is dissolved; 1 mg. per cc. of physiological saline to be the equivalent of 4 tenths of a milligram per kilogram of body weight. This is then instilled rapidly into the drained cavity, the needle flushed with saline and withdrawn; the patient is instructed to roll around so as to distribute the nitrogen mustard throughout the cavity. The process can be repeated as often as the fluid reaccumulates, as long as two weeks intervene between the times of the nitrogen mustard instillations. When nitrogen mustard instillations are used repeatedly, the blood count, particularly the leukocytes and platelets, must be carefully watched. However, damage to the hematopoietic system from nitrogen mustard administered in this fashion is not as likely as when it is administered intravenously. Great care must be taken, of course, to be sure that the nitrogen mustard is introduced into the free cavity and that none of it is introduced beneath the tissues.

If nitrogen mustard is unsuccessful in controlling the accumulation of fluid, or is not tolerated, one may try either triethylene melamine (TEM) or triethylene thiophosphoramide (thio-TEPA) or radiotherapy. These compounds have the advantage of not being irritating to tissue and may be used if nitrogen mustard causes a tissue reaction. Also, if 600-1,000 cc. of fluid is left in the pleural cavity prior to instilling the nitrogen mustard, the irritating effects may be reduced sufficiently to be tolerated by the patient.

8. *Pathological fractures.* These are not uncommon and are productive of pain, discomfort and usually immobilization of the patient. Where possible, internal splinting or some other form of rigid fracture fixation should be done, which permits the patient to be out of bed and partially active. X-ray therapy administered to such areas will often promote rapid healing.

9. *Intractable pain.* There is a variety of neurological procedures for the relief of intractable pain: Cordotomy, nerve root section, alcohol injection of nerves, prefrontal lobotomy, and other similar procedures. There should be no hesitancy in either advising or carrying out such procedures when it is apparent that the patient has intractable pain, controllable only by large, repeated doses of narcotics, provided that the patient has sufficient life expectancy to justify operative procedures.

10. *Castration.* Orchiectomy has been of great value in the control of prostatic cancer and has not only been productive of relief of pain and urinary obstruction in many patients, but it has also prolonged life. Many urologists advocate doing this immediately after the diagnosis is established. Others prefer to await the development of pain from metastasis, urinary obstruction, or other similar problems; and in the interval will treat the patient with estrogens.

11. *Induction of artificial menopause.* In premenopausal women with disseminated carcinoma of the breast, suppression of ovarian function is recommended as the initial effort in steroid therapy. Objective regression will occur in 30 per cent to 40 per cent of such patients, and the remissions so induced will vary in duration from several months to a year or more. Inactivation of ovarian function by x-radiation is an acceptable alternative, when indicated, for oophorectomy. Dosage must be graduated to physiologic age.

12. *Adrenalectomy.* Removal of the adrenal glands for control of metastatic carcinoma of the breast must be regarded still as an experimental procedure. A definitive analysis should be completed and published in the J.A.M.A. during 1956, from pooled data of the Subcommittee on Steroids and Hormones, Research Committee, American Medical Association. Adrenalectomy is more likely to produce objective regression of disease in women who have previously enjoyed remission from steroid therapy (oophorectomy or administered steroid hormones); about 40 per cent of these patients respond favorably. In patients not responsive to prior steroid therapy, adrenalectomy is not often effective. Remissions when achieved seem to average about 9 months in duration.

In prostatic carcinoma, adrenalectomy seldom induces genuine regression of skeletal disease, and the few remissions obtained are usually of only three to four months in duration.

13. *Hypophysectomy.* This procedure is the ultimate form of physiologic derangement within the body and its employment should be limited to those few centers interested in a study of such experimental procedures. It is difficult to assay its value because it is doubtful that the procedures performed to date have completely inactivated the gland. Estimates vary as to its effectiveness from 25 to 50 per cent. At present, there are indications that removal of the pituitary in the nonadrenalectomized patient is of the same relative effectiveness as adrenalectomy.

Each case must be individualized and studied carefully, and there should be no hesitancy in ob-

taining consultation when the physician is faced with the need of determining whether or not a surgical procedure will be of real value to his patient. *Patients should be carefully selected so that the life expectancy justifies the use of such palliative procedures.* If the physician elects to operate upon the patient, he must carefully discuss it with the patient and the family and explain the advantages—and to the family, the risks. While the physician should not hesitate to urge such a procedure when he is of the opinion it will offer real help to the patient, the final decision will, of course, rest with the family and the patient, and will be based upon the advice given by the physician. Therefore, the physician must be careful and objective in his presentation, and be neither overly enthusiastic nor unduly pessimistic about what can be accomplished.

Steroid Hormones

In two major types of cancer steroid hormones have become important palliative agents.

Prostatic carcinoma. Estrogenic steroids are usually effective both by subjective and objective criteria. Diethylstilbestrol, 15 mg. or more daily, or its equivalent, should be given for at least 3 months. In patients resistant to estrogens, a more cautious trial with androgenic hormone is justifiable.

For carcinoma of the breast, hormone therapy should preferably be employed when the disease is too extensive for radiation therapy or when it is radio-resistant. The choice of hormone is governed

by the physiologic age of the patient as indicated by ovarian function, and as indicated by the accompanying flow charts. It should be borne in mind that androgenic steroids should not be used for post-menopausal women, for whom estrogens are more effective for both skeletal and soft tissue metastasis. Dosages most commonly employed are:

Androgen—Testosterone propionate, 50 mg., in oil, injected intramuscularly 3 times weekly.

Estrogen—Diethylstilbestrol, 15 mg., orally, daily.

Other substances may be employed, but in proportionate androgenicity or estrogenicity to the above dosages. Except in cases of obvious progression, treatment should be continued for at least 3 months.

Radiological

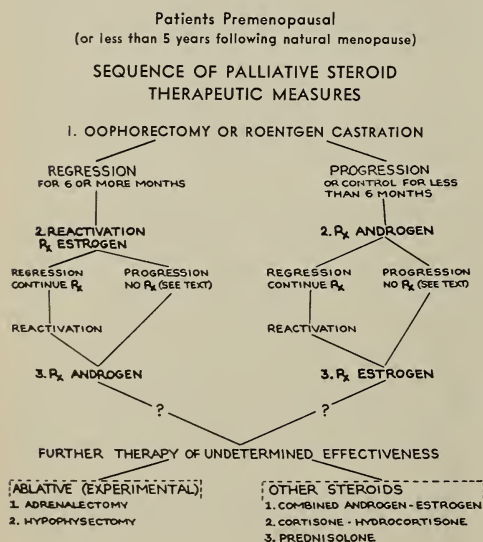
Many patients with incurable cancer can be benefited by a properly planned radiological procedure. In addition to x-ray therapy there is radium, radioactive isotopes, radon seeds and other types of ionizing beams.

Radiation, like surgical operation, should be used with great care and skill, for if improperly used it can lead to the production of necrosis and ulceration which can be as much a problem as the cancer itself. Judiciously used, it will slow the progress of the disease, relieve pain from metastasis, destroy some of the foul, fungating lesions which are seen on skin, breast, cervix and oral cavity, and in the cases of the lymphomas and leukemias will be one of the very few methods available for definitive therapy.

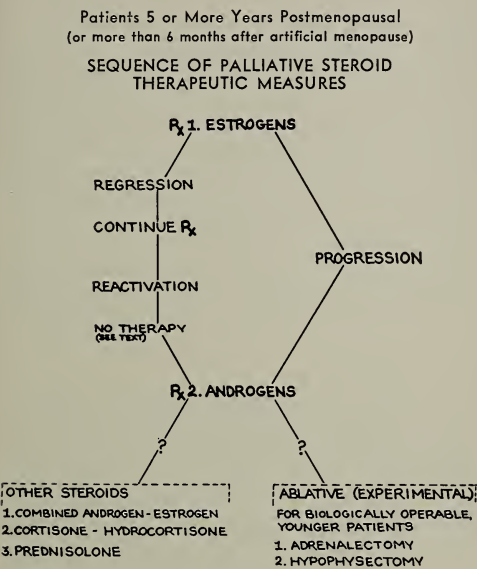
Radiotherapy has its greatest usefulness in the following areas: Skin, lip, oral cavity, nasopharynx, larynx, breast, uterine fundus and cervix, testicle, ovary, metastasis to bone, lymphomas, leukemias and Ewing's sarcoma of bone. It is also of benefit in selected cases of cancer of the thyroid, thymus, lung, esophagus, bladder and kidney; and in certain cases of soft tissue sarcoma.

The value derived from this therapy will depend largely upon the care with which one delivers the dose of irradiation to the area of disease (by adroit selection of the quality of the beam, number of fields, and duration of treatment). The total dosage to be administered should be carefully planned so as to insure the best control possible of the disease being treated. X-ray therapy cannot be repeated ad infinitum to the same area without bringing on tissue damage and the possibility of necrosis. When it is believed that it will be necessary to treat an area more than once, then the initial dosage must be below cancerocidal levels.

Radium needles and radon seeds may be utilized in the treatment of lymphnode metastasis, either



primarily or as a supplement to x-ray therapy. They can be implanted in a number of the ulcerative lesions involving such areas as skin, breast, oral cavity, bladder and rectum. Properly used, they can destroy an ulcerative lesion and lead to healing, with resultant relief of the distress and discomfort.



Radioactive Isotopes

Radioactive Iodine. This has shown promise in the control of about 2 per cent of thyroid cancer, usually in the so-called "metastasizing adenoma" or the physiologically active metastasis. However, knowledge of it is still so incomplete that its use is limited to research centers with personnel versed in administering it.

Radioactive Phosphorus. The principal usage of this isotope therapeutically has been in the treatment of certain cases of leukemia and polycythemia vera. It has been no more effective than any other form of radiation therapy.

Radioactive Colloidal Solutions. These have been used as colloidal gold and colloidal chromic phosphate with radioactive phosphorus for instillation in pleural and abdominal cavities in an effort to control the formation of fluid. These substances have also been injected in and near metastasis with the hope that it would be picked up and deposited in metastatic lymphnodes. The success of this has been questionable.

Radioactive Cobalt. This is merely a substitute for radium and is used in much the same fashion, either in the form of a large source containing sev-

eral grams, or in the form of needles, wires or solutions. Therapeutically it has no appreciable advantage over radium.

Chemotherapy

For the most part, the drugs in this chemotherapy list are of an experimental nature and when they are used it should be done only after an explicit understanding between doctor, family and patient—that they *are* experimental and that the results are uncertain. Some of the drugs listed are on the market and are available on prescription. They should not be employed until *after* the well established methods of palliation (such as radiotherapy and surgery) have been utilized to the limit of their effectiveness. Others are available only through the research departments of the several pharmaceutical companies. Virtually all of them have been tried on a variety of forms of cancer—usually without much success. Occasionally a startling result is observed. While their value in most instances is dubious, there is probably no reason for not attempting to use them under carefully controlled conditions, if all other methods of therapy in common usage have been exhausted.

The following drugs are available on prescription:

1. RADIOMIMETIC COMPOUNDS

(a) *Nitrogen mustard* is administered intravenously, injected into the tubing of a *free-flowing* saline or glucose infusion, usually in a solution of 1 mg. per cc. of solution, with a total cumulative dosage in any one course that does not exceed 0.4 mg. per kilogram of body weight. Usually the course of therapy is divided into from 4 to 6 injections, but this is variable among its many users. It has a rather profound effect upon the hematopoietic system and will cause a sharp reduction in the leukocytes and platelets. Whenever it is used, frequent blood counts are required, and if the courses are repeated very often, bone marrow studies should be done. It has its best usage in the treatment of the lymphomas and leukemias. Furthermore, in such situations it may, so to speak, resensitize the patient to additional x-ray therapy. Some investigators have felt that it has been of benefit in the treatment of carcinoma of the lung and at least one investigator has felt that it has been of some value in the treatment of metastatic cancer in many forms when combined with cortisone. Shortly after administration of the material the patient usually becomes quite nauseated. For this reason the patient may be heavily sedated shortly before the material is given. When this is done he may be able to sleep through the period of nausea and not be unduly distressed. Nitrogen mus-

tard has also been introduced intra-arterially to produce a locally destructive effect upon a tumor not otherwise treatable. This has been tried mainly in the oral cavity and in the pelvic area. This is an experimental procedure of questionable value, suitable only in research centers.

(b) *Triethylene melamine* (TEM). This is a close relative to nitrogen mustard. It may be taken orally, a distinct advantage. It is packaged in 1 and 5 mg. tablets. It has been used in the treatment of lymphomas, the usual dosage being 5 mg. a day for a period of 3 days, followed by a rest period. It is inadvisable to readminister TEM at intervals shorter than one week. It has a rather profound effect on the hematopoietic system which may appear quite suddenly, without warning. Patients receiving this type of therapy must be watched *very* closely with repeated blood counts. At the first sign of any depression of either the leukocytes or platelets the therapy must be discontinued immediately. Its actual values are hard to assess. Some investigators feel that they have accomplished a great deal with it in the control of some of the lymphomas.

Triethylene melamine has been used also in the treatment of widespread ovarian carcinoma, the usual dosage being 5 mg. a day for a period of 3 days. Approximately 30 to 40 per cent of the patients so treated are said to show rather prompt regression of their metastatic lesions and relief from their symptoms. The duration of this benefit, however, is said not to be too long but to be measured in a period of months. Again, when other methods of therapy have failed, the usage of triethylene melamine in such patients would seem justified.

The next compound is not on the market but is available only through research laboratories of the pharmaceutical houses.

(c) *Triethylene thiophosphoramide* (thio-TEPA). This preparation has been substituted for triethylene phosphoramide (TEPA). It does not have quite as depressive an effect upon the bone marrow. It is administered in 10 mg. doses, intramuscularly, every second day until a dose of 1.0 to 2.0 mg. per kilogram of body weight has been given. The patient must be watched closely for depression of the hematopoietic system. Ordinarily the first signs of such depression are in the leukocyte or platelet counts. The drug should be discontinued if the number of leukocytes falls below 4,000 per cu. mm. A leukocyte count should be done before each injection and a platelet count once a week.

Thio-TEPA is said to be of value in the treatment of melanoma, soft tissue sarcomas and some of the lymphomas.

(d) *Myleran*. This has been used in the treatment of "radioresistant" stages of myeloid leukemia. The initial dosage is usually 4 to 8 mg. a day (2 to 4 tablets) until the leukocyte count approaches normal levels with a reversion toward more mature cells of the polymorphonuclear series and the spleen has regressed. Then a maintenance dosage is established. This will vary from patient to patient and may be 2 mg. a day or 2 mg. twice a week. However, the dose level is based on the individual patient. It has a depressant effect on the bone marrow and the patient's blood count must be watched carefully throughout the whole course of therapy. During the initial phases the count should be taken approximately twice a week, and after maintenance has been established, about once a week. The platelets as a rule are the most sensitive and are the first blood elements to decrease when drug tolerance is exceeded. It is also recommended that periodic bone marrow examinations be done.

2. ANTIMETABOLITES

(a) *Antifolic compounds*. There are quite a number of these, of which the best known is Aminopterin, now largely replaced by Amethopterin (Methotrexate). Its greatest value is in the treatment of acute lymphatic leukemia of childhood. It has not proven to be of any real value in adults. It is used at first to gain control of the disease and then for maintenance by regulation of the dosage needed for this purpose. The dosage varies from patient to patient, but commonly 0.5 to 1.0 mg. of Aminopterin or 2.5 mg. of Amethopterin once a day is required. This is increased or decreased according to tolerance of the patient, so as to determine that dosage which is just below tolerance levels. The signs of drug intolerance are ulcerative lesions in the mouth and profound depression of the hematopoietic system. Patients on this therapy should have frequent blood counts (once or twice a week), should be examined daily during the initial phase of therapy and once a week thereafter. Once initial control of the disease has been secured, the maintenance dose should be approximately half of the original therapeutic dose. In the very acute phases of the disease the Aminopterin may be combined with cortisone therapy to obtain remission. Eventually the patient develops resistance to this drug and other means of therapy should be sought.

(b) *Antipurines*. The one most commonly in use today is 6-Mercaptopurine (Purinethol,[®] 6-M.P.). Its greatest value is in the treatment of acute lymphatic leukemias in childhood. It may be used alone or in combination with an antifolic compound or with cortisone. The dosage varies between 50 and 200 mg. a day and is approximately 2.5 mg. per kilo-

gram of body weight per day, but may be increased to 5 mg. per kilogram per day. During its administration blood counts should be taken twice a week. Treatment should be stopped or the dose reduced if there are signs of profound effect on the hematopoietic system.

Psychotherapy

This is nothing more or less than a common sense, cheerful approach to a difficult problem of patient care. As was noted earlier, one of the prime responsibilities of the physician in patients with incurable cancer is the maintenance of morale. In order to do this, one must use a form of psychotherapy of trying to encourage the patient, of trying to help him when his problems are difficult, of seeing to it that he is comfortable, and of holding out to him some ray of hope that he can be definitely helped to overcome his problem. The physician should not neglect the time-honored technique of "hand holding." Under this we might include frequent contact with the patient and the family, either by way of the telephone or in person, simply to talk to the patient and the family so that both will feel reassured that the physician constantly keeps them in mind. The physician should not hesitate to explain any and all aspects of the problem to the family and to the patient, such of them as he feels will be of value. He should encourage the patient and the family to ask questions. He should, however, always temper his answers so they do not destroy whatever hope he may have.

Flat predictions concerning longevity should be avoided. Occasional patients with advanced disease exhibit some degree of spontaneous regression. Incomplete removal of some cancers, or palliative irradiation, may result in long-term survivals. Such variations in the natural history of cancer constitute much of the "success" of quack treatment after a physician has predicted that death will occur in some arbitrary period of time.

Medication

There is a variety of medications on the market which can be used for an equal variety of purposes such as relief of pain, to instill a sense of well-being, to help in the maintenance of adequate nutrition, and so on. These medications include:

1. *Analgesics.* The principal ones in this group are aspirin and the various aspirin compounds and codeine. These drugs, in spite of their mild action, will often do a great deal in controlling mild pain for long periods of time, particularly if combined and given with reasonable frequency. Use of them should be encouraged.

2. *Narcotics.* These, of course, are to control pain and include such drugs as codeine, meperidine

hydrochloride (Demerol®), morphine, dihydromorphinone hydrochloride (Dilaudid®), and levorphan tartrate. Pain killing drugs should never be denied to a patient in doses adequate to control discomfort. However, the physician must be very careful to keep the amount used at a minimum level and to use first the least habit-forming drugs. The patient who has developed a large tolerance to pain-killing drugs may present a tremendous problem.

3. *Sedatives.* Some of the barbiturates dull the faculties and lower the level of perception. The usage of small doses of them on a constant, periodic basis will often lessen the sensibilities without interfering with ordinary activities. They should be used deliberately for this purpose. They should also be combined with the sleep-producing barbiturates for night-time usage.

There is a larger and increasing number of non-barbiturates and tranquilizers now coming on the market. How useful these will be will remain to be determined, but it would appear that they would be of value in the treatment of these patients.

4. *Other drugs.* Under this heading can be placed those which tend to give the patients a sense of well-being, such as chlorpromazine (Thorazine), rauwolfia and dextroamphetamine sulfate. These drugs, singly or combined with some of the analgesics or sedatives, can be used to produce a mild state of euphoria as well as relief from discomfort. The patient is often enabled to tolerate his situation much better and to face it with considerably more optimism than he might otherwise do. The dextro-amphetamine series will have some disadvantages in that it may affect the appetite unfavorably.

5. *Vitamins.* Vitamins of some type should often be given to these patients. In the first place, patients expect it and feel that it will help them. The psychotherapy of this is very apparent. In the second place, vitamins sometimes give the patient a sense of well-being and may well increase the patient's desire to eat.

General Measures

There is, of course, a wide variety of general measures which should be used in caring for these patients. They are mostly designed to take care of the small problems which contribute to the patient's comfort.

1. *Nutrition.* With many of these people it is difficult to maintain their nutrition. The family needs to be shown how to find those foods which are most appealing to the patient and contain the most caloric values. In some circumstances it is better not to try to feed the patient regular meals but rather to feed him frequently and in small amounts. In that case, one of the best plans is to lay

out the entire day's menu and then divide it into six or eight small feedings. The addition of nutritional supplements in the form of predigested proteins is often helpful.

2. *Anemia.* Many of these patients have a hematopoietic system which will not produce the required amount of blood cells; and others, of course, have bleeding lesions which remove cells as fast as they are produced. In addition to hematopoietic agents, occasional transfusions should be used. These measures are not employed in the sense of prolonging life, but in the sense of increasing comfort. Usually it is not necessary to give enough transfusions to raise the hemoglobin to normal levels but merely bring patients back to the point where the anemia is only moderate instead of severe.

3. *Bed care.* Families, as a rule, need to be taught the proper methods of bed care so that the patient is kept comfortable, does not develop bed sores or contractures. Some help should be secured through some such organization as the Visiting Nurses' Association, so that the family is taught how to give bed baths, enemas, and general care for the patient. It is also advisable, many times, to teach someone in the family how to administer hypodermics so that the patient can receive needed medication when it is necessary.

4. *Odors.* The odors associated with cancer patients may be very troublesome. The family should be given instructions as to how these odors can be eliminated, or at least reduced.

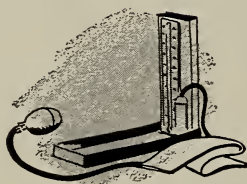
5. *Fluid accumulations.* Fluid accumulations in

the arms or legs are often a problem. These can be combated by elevation of the affected part. In the arm this can consist of a suspension apparatus which the patient can use at night. In the leg it consists of elevating the leg while the patient is sitting or lying down. The use of elastic stockings will also help in reducing fluid accumulations. Diuretic agents are useful in some instances.

SUMMARY

The care of the patient with advanced or metastatic cancer may be a difficult problem for physician, family and patient. It is incumbent upon the physician, in such cases, to do everything within his power to bring peace of mind to the family and to the patient. He should consider all of the possible avenues of treatment available to him, weigh the benefits derived from each against their possible disadvantages. He should not hesitate to obtain consultation from someone who may have more information than he. He should relieve stress and discomfort and keep the patient active, and economically and socially useful as long as possible. He should prevent the entrance of quacks into the picture. He should never abandon the patient but always give to the family and the patient a continual sense of support in their problem. The job is not one of prolonging an unhappy, uncomfortable, painful, miserable existence—the job to be done is one of giving the patient the best of what life remains to him in comfort and usefulness.

May, 1956.



Francis T. Hodges, M. D.

FEW PUBLIC-SPIRITED MEN have been more tireless in their efforts for the good of organized medicine than Francis Traill Hodges. His tragic death in August of this year as a result of injuries received in a dive into a swimming pool saddened many people from one end of the country to the other, for he was widely known and appreciated.

Born in Indianapolis in 1907, he was the fourth generation of a succession of physicians. His higher education was obtained at Harvard and the University of Indiana. He was graduated in medicine from the University of Indiana in 1933 and began general practice in San Francisco in 1937. He is survived by his wife and three young children.

He served with the United States Navy during World War II and was in the Pacific Theater. He attained the rank of Captain, and found time to continue with Naval Reserve activities until the eve of his death.

Dr. Hodges was a very active delegate to the California Medical Association from the San Francisco Medical Society. He took great interest in the formation of the American Academy of General Practice, and in 1953 he served as President of the California Academy of General Practice.

He became a trustee of C.P.S. in 1951, and was President of the organization for the three years

ending in May of 1956. He remained on the Board of Trustees and on the Executive Committee of the Board. He was the Commissioner to the National Blue Shield from the 11th District, comprising the western states and Hawaii, and he was past president of the Western Conference of Prepaid Medical Care Plans.

In addition to all of these activities, he found time to participate in the affairs of the Episcopal Diocese of California and to be a director of the Canon Kip Community Center. He was active on the staff of St. Luke's Hospital in San Francisco. He was a member of the Olympic and Commonwealth Clubs, a Scottish Rite Mason and a Shriner, and he took an active interest in aquatic sports and sports car activities. Besides all this, he wrote numerous and worthy articles on medical and related subjects. He was in practice in San Francisco and his home was in Marin County. How did he do it all? Those of us who knew him wondered and marveled.

It has been the privilege of this writer to spend many days and hours with him over the conference table, and to observe his calmness, wisdom and fairness. By all he was respected, by many admired, and by those who knew him best, beloved.

T. ERIC REYNOLDS, M.D.

In Memoriam

BRIGGS, GEORGE ABIEL. Died June 10, 1956, aged 76. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1905. Licensed in California in 1906. Doctor Briggs was a member of the Sacramento Society for Medical Improvement.



CLARKE, GEORGE W. Died in Los Angeles, March 21, 1956, aged 83, of heart disease. Graduate of the University of Michigan Medical School, Ann Arbor, 1896. Licensed in California in 1920. Doctor Clarke was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



FALCONER, ERNEST H. Died in Los Gatos, August 11, 1956, aged 73, of heart disease. Graduate of McGill University Faculty of Medicine, Montreal, Quebec, Canada, 1911. Licensed in California in 1915. Doctor Falconer was a member of the San Francisco Medical Society.



FINKELBERG, IVAN L. Died in San Bernardino, July 18, 1956, aged 65, of hypertension. Graduate of the Stritch School of Medicine of Loyola University, Chicago, 1916. Licensed in California in 1917. Doctor Finkelberg was a member of the San Bernardino County Medical Society.

FOX, ANN M. Died in Van Nuys, July 23, 1956, aged 40. Graduate of the New York Medical College, Flower and Fifth Avenue Hospitals, New York, 1943. Licensed in California in 1947. Doctor Fox was an associate member of the Santa Clara County Medical Society.



HODGES, FRANCIS T. Died in Santa Barbara, August 15, 1956, aged 49, of injuries received in a dive into a swimming pool. Graduate of Indiana University School of Medicine, Bloomington-Indianapolis, 1933. Licensed in California in 1938. Doctor Hodges was a member of the San Francisco Medical Society.



HOHANSHELT, ANNA S. Died August 8, 1956, aged 64. Graduate of the College of Physicians and Surgeons, Los Angeles, 1919. Licensed in California in 1920. Doctor Hohanshelt was a member of the Los Angeles County Medical Association.



MCCRACKEN, EARL JOSEPH. Died July 17, 1956, aged 43. Graduate of the University of Louisville School of Medicine, Kentucky, 1947. Licensed in California in 1952. Doctor McCracken was a member of the Los Angeles County Medical Association.

MEREDITH, HAROLD HAMILTON. Died in Oakland, August 6, 1956, aged 77, of coronary thrombosis. Graduate of the Gross Medical College, Denver, 1899. Licensed in California in 1918. Doctor Meredith was a member of the Alameda-Contra Costa Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.



ROBERTS, BUFORD B. Died in Inglewood, July 9, 1956, aged 56, of heart disease. Graduate of the University of Oklahoma School of Medicine, Oklahoma City, 1927. Licensed in California in 1935. Doctor Roberts was a member of the Los Angeles County Medical Association.



SEAL, HERMAN. Died in Encino, July 2, 1956, aged 56, of heart disease. Graduate of Tulane University School of Medicine, New Orleans, 1922. Licensed in California in 1946. Doctor Seal was a member of the Los Angeles County Medical Association.



SHUMAN, JOHN WILLIAM, SR. Died in Los Angeles, August 4, 1956, aged 71. Graduate of the University of Pittsburgh School of Medicine, 1910. Licensed in California in 1920. Doctor Shuman was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



SWANSON, ALBERT J. Died in Costa Mesa, July 10, 1956, aged 73, of cancer. Graduate of the Chicago College of Medicine and Surgery, 1908. Licensed in California in 1930. Doctor Swanson was a retired member of the Santa Bar-

bara County Medical Society and the California Medical Association, and an associate member of the American Medical Association.



TERRILL, ELWYN EUGENE. Died in Pasadena, July 30, 1956, aged 56, of cancer. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1927. Licensed in California in 1927. Doctor Terrill was a member of the Los Angeles County Medical Association.



TURKEL, ASHER SIGMUND. Died in Los Angeles July 14, 1956, aged 52, of coronary thrombosis. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1933. Licensed in California in 1933. Doctor Turkel was a member of the Los Angeles County Medical Association.



WAHLE, HENRY. Died in Oakland, July 22, 1956, aged 86, of cardiac failure due to coronary arteriosclerosis. Graduate of the University of Illinois College of Medicine and Surgery, Chicago, 1897. Licensed in California in 1918. Doctor Wahle was a retired member of the Alameda-Contra Costa Medical Association and the California Medical Association, and an associate member of the American Medical Association.



ZAISER, HARRY E. Died in August, 1956, aged 77. Graduate of the St. Louis College of Physicians and Surgeons, 1902. Licensed in California in 1914. Doctor Zaiser was a retired member of the Orange County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



CALIFORNIA MEDICAL ASSOCIATION

Annual Meeting

Ambassador Hotel
LOS ANGELES

April 28 - May 1, 1957

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted to the appropriate section secretary (see list on this page) no later than November 19, 1956.

Scientific Exhibits

Space is available for scientific exhibits. If you would like to present an exhibit, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association no later than December 1, 1956. (No exhibit shown in 1956, and no individual who had an exhibit at the 1956 session, will be eligible until 1958.)

SCIENTIFIC PAPERS

SCIENTIFIC EXHIBITS

PLANNING MAKES PERFECT
AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

- ALLERGY William J. Kerr, Jr.
711 D Street, San Rafael
- ANESTHESIOLOGY Howard S. Downs
332 North Glendale Avenue, Glendale 6
- DERMATOLOGY AND SYPHILOLOGY . . Edwin M. Hamlin
2932 North Fresno Street, Fresno
- EAR, NOSE AND THROAT Seymour Brockman
2007 Wilshire Boulevard, Los Angeles 57
- EYE Harold B. Alexander
14 West Valerio Street, Santa Barbara
- GENERAL PRACTICE Thomas N. Elmendorf
Masonic Building, Willows
- GENERAL SURGERY W. Kenneth Jennings
233 West Pueblo Street, Santa Barbara
- INDUSTRIAL MEDICINE AND SURGERY . . Earle T. Dewey
600 Stockton Street, San Francisco 20
- INTERNAL MEDICINE Donald W. Petit
960 East Green Street, Pasadena 1
- OBSTETRICS AND GYNECOLOGY . . . Keith P. Russell
511 South Bonnie Brae, Los Angeles 57
- ORTHOPEDICS Raymond M. Wallerius
2909 J Street, Sacramento 16
- PATHOLOGY AND BACTERIOLOGY . . Dominic A. DeSanto
Mercy Hospital, San Diego 3
- PEDIATRICS Sidney Rosin
6230 Wilshire Boulevard, Los Angeles 48
- PSYCHIATRY AND NEUROLOGY . . . Howard A. Black
2901 Capitol Avenue, Sacramento 16
- PUBLIC HEALTH James C. Malcolm
15000 Foothill Boulevard, San Leandro
- RADIOLOGY Stanford B. Rossiter
1111 University Drive, Menlo Park
- UROLOGY Edmund Crowley
1930 Wilshire Boulevard, Los Angeles 57

NEWS & NOTES

NATIONAL • STATE • COUNTY

LOS ANGELES

The fourth annual meeting of the **Southern California Psychiatric Society** will be held Saturday, October 20, 1956, at the Ambassador Hotel in Los Angeles. Registration will take place at 10:30 that morning and the scientific program will begin at 1:30 p.m.

The **Society of Graduate Internists** of the Los Angeles County Hospital will hold its fourth annual clinical symposium at the Statler Hotel and the Los Angeles County Hospital on November 16, 17, and 18, 1956. Guest speakers will be Dr. Jerome W. Conn, Ann Arbor; Dr. Michael E. DeBakey, Houston; Dr. Carl V. Moore, St. Louis, and Dr. Robert W. Wilkins, Boston.

The National Institutes of Health have granted \$13,432 for the first year of a two-year study on the "Screening of Plant and Animal Extracts for Antineoplastic Activity" to Drs. Mervyn Hardinge and Lester Loneragan of the Department of Pharmacology in the College of Medical Evangelists School of Medicine. Collaborating with the team will be Dr. Bruce Halstead and associates from C.M.E.'s School of Tropical and Preventive Medicine.

SAN FRANCISCO

A surgical refresher course dedicated to the memory of the late **Dr. Francis T. Hodges**, under the sponsorship of the San Francisco Academy of General Practices, will be given by the surgical service of the Veterans Administration Hospital at Fort Miley, San Francisco, and by members of the departments of surgery of Stanford University and University of California schools of medicine. Meetings will be held Tuesday evenings, October 23 and October 30 and November 6, 13, 20 and 27 between the hours of 8 and 10 in the Fort Miley hospital auditorium.

The course is accredited for postgraduate education for AAGP members. The fee is \$15 for AAGP members and \$20 for nonmembers.

For further information and registration, contact Lawrence M. Trauner, M.D., 450 Sutter Street, San Francisco 8.

Announcement of the appointment of **Dr. Leon Goldman** as associate dean of the University of California School of Medicine, San Francisco, was announced recently by Dr. J. B. deC. M. Saunders, dean of the School of Medicine.

The appointments of **Dr. Robert H. Crede** and **Malcolm S. Watts** as assistant deans were also announced. All three men will continue to serve in their previous positions, Dr. Goldman as professor and chairman of the department of surgery, Dr. Crede as associate professor of medicine and Dr. Watts as assistant clinical professor of medicine. In addition

Dr. Goldman's responsibilities will include supervision of postdoctoral training, including internships, and he will also serve as liaison representative with the San Francisco Hospital. Dr. Crede will have purview of matters affecting undergraduate students. Dr. Watts will assist the dean in the area of professional relations. He will be the dean's liaison officer with the medical profession and with medical societies.

The Utility Workshop of the San Francisco Committee for Service to Emigres will be used as an employment project for patients in the **Rehabilitation Service** of Stanford Hospital, it was announced recently by Hyman Kaplan, general secretary of the committee.

The Workshop for the past 13 years has given employment opportunities to elderly and disabled persons unemployable in private industry. The Hospital's Rehabilitation Service has launched the experimental program in cooperation with the Utility Workshop for the purpose of helping rehabilitation patients to adjust to a job routine preliminary to attempts to place them in competitive industry.

At the 9th Annual Meeting of the **American Association of Blood Banks** held September 3 to 5, 1956, in Boston, **Mrs. Bernice Hemphill** of San Francisco was reelected treasurer and **Dr. Owen F. Thomas** of Santa Rosa was elected a district director. The new president of the organization is Dr. E. E. Muirhead of Dallas, Texas, and the president-elect Dr. Oscar Hunter of Washington, D. C.

GENERAL

Three schools in California each received \$500,000 of the recently allotted Ford Foundation grants totaling \$21,750,000 that were given to strengthen instruction in the 44 privately-supported medical schools now in operation in the United States. They are: College of Medical Evangelists School of Medicine, Los Angeles; University of Southern California School of Medicine, Los Angeles; and Stanford University School of Medicine, San Francisco.

The Pacific Coast **Society for the Study of Sterility** will hold its fourth annual open meeting at Palm Springs, California, November 8 to 11, 1956.

Registration is open to all physicians and other scientists interested in the problems of infertility. Advance registration fee of \$10 may be sent to the secretary-treasurer, 10911 Weyburn Avenue, Los Angeles 24.

The annual convention of the **American College of Gastroenterology** will be held at The Roosevelt in New York City on October 15, 16, 17, 1956. The program this year will feature six panel discussions on the diseases of the gastrointestinal tract, one to be presented by each of the six medical schools in New York City. Following the convention, the annual course in **postgraduate gastroenterology**, under the personal direction of Dr. Owen H. Wangensteen of Minneapolis and Dr. I. Snapper of Brooklyn will take place on October 18, 19, 20, 1956. The faculty has been chosen from the medical schools in New York and adjacent areas.

Copies of the program and further information concerning the postgraduate course may be obtained by writing to: American College of Gastroenterology, 33 West 60th Street, New York 23, N. Y.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education assemblies and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Dermatology in General Practice. Wednesdays, October 17 through November 21. Twelve hours. Fee \$30.00.

Aviation Medicine. October 24, 25, 26. Twenty-one hours. Fee: \$50.00.

Cardiology. Monday, November 12.*

Obstetrics and Gynecology. Friday and Saturday, November 16 and 17.*

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Medical Ophthalmology and Ophthalmoscopy. Thursday and Friday, November 1 to 2. Fourteen hours. \$60.00.

Symposium on the New Drugs. Saturday, November 10, Children's Hospital, San Francisco. Seven hours.*

Gastroenterology. Friday and Saturday, November 16 and 17. Fifteen hours.*

Symposium on Cataracts. December 5, 6, 7. Twenty hours.*

New Diagnostic and Therapeutic Techniques. December 12, 13, 14. Twenty hours.*

Conference on Dermatology. January 11 and 12, 1957. Fourteen hours.*

Iron in Clinical Medicine (International Symposium). January 28 and 29, 1957. Sixteen hours.*

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: \$250.00 per month.

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MONTrose 4-3600, Ext. 665.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Home Course in Electrocardiography. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: \$100.00.

Bedside Clinics and Panel Discussions on Therapy in Internal Medicine. Los Angeles County Hospital, Thursdays, October 18 through January 24, 1957, 7:30 to 9:30 p.m. Twenty-four hours. Fee: \$65.00.

*Fees to be announced.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: \$30.00. (Each session all-inclusive.)

Conferences and Clinics in Endocrinology. Hotel Statler and Los Angeles County Hospital. All day, each day, November 29, 30 and December 1. Fee: \$65.00.

Conferences and Live Clinics in Diseases of the Liver and Biliary Tract. All day, each day, Friday, Saturday and Sunday, March 22, 23, and 24, 1957. Hotel Statler and Los Angeles County Hospital. Fee: \$65.00.

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApiTal 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Surgical Anatomy: Dissection, Demonstration and Lectures, Thorax, Abdomen and Pelvis. Mondays and Wednesdays, January 14 through April 17, 1957. 104 hours.

Varicose Veins, the Peripheral System. Tuesdays, January 15 through February 26, 1957. Fourteen hours.

Surgical Anatomy: Demonstration and Lectures, Thorax, Abdomen and Pelvis. Wednesdays, January 16 through April 17, 1957. Twenty-six hours.

Management of Infertility. Thursdays, January 17 through March 7, 1957. Twelve hours.

Operative Surgery. Wednesdays, March 20 through June 5, 1957. Thirty hours.

Gynecology. Wednesdays, March 27 through May 29, 1957. Ten hours.

Thoracic Surgery. Wednesdays, April 24 through May 15, 1957. Eight hours.

Contact: Chairman, Section on Graduate and Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-9131, Ext. 205.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE COURSES

SACRAMENTO VALLEY CIRCUIT, in cooperation with Stanford University School of Medicine:

Dunsmuir—Mondays, October 22, 29, November 5, 12.

Chico—Tuesdays, October 23, 30, November 6, 13.

Marysville—Wednesdays, October 24, 31, November 7, 14.

Auburn—Thursdays, October 25, November 1, 8, 15.

NORTH COAST CIRCUIT, in cooperation with University of California School of Medicine, San Francisco:

Eureka—Mondays, October 22, 29, November 5, 12.

Ukiah—Tuesdays, October 23, 30, November 6, 13.

Napa—Wednesdays, October 24, 31, November 7, 14.

WEST COAST CIRCUIT in cooperation with University of Southern California School of Medicine:

San Luis Obispo—Mondays, February 18, 25, March 4, 11, 1957.

Santa Maria—Tuesdays, February 19, 26, March 5, 12, 1957.

Santa Barbara—Wednesdays, February 20, 27, March 6, 13, 1957.

POSTGRADUATE INSTITUTES, 1957

SOUTHERN COUNTIES (Riverside, Orange and San Bernardino) in cooperation with University of California, Los Angeles, February 14 to 15, 1957, Disneyland Hotel, Anaheim. Chairman: H. C. Barron, M.D., 4030 Eighth Street, Riverside.

WEST COAST COUNTIES in cooperation with University of Southern California, March 7 to 8, 1957, Golden Bough Theater and La Playa Hotel, Carmel. Chairman: Edwin W. Tucker, M.D., 1073 Cass Street, Monterey.

SAN JOAQUIN COUNTIES in cooperation with University of California, San Francisco, March 21 to 22, Hotel Californian, Fresno. Chairman: Richard H. Whitten, M.D., 2912 Fresno Street, Fresno.

NORTH COAST COUNTIES in cooperation with Stanford University, April 11 to 12, 1957, Odd Fellows Hall, Santa Rosa. Chairman: Robert S. Quinn, M.D., 185 Sotoyome Avenue, Santa Rosa.

SACRAMENTO VALLEY COUNTIES in cooperation with College of Medical Evangelists, June 20 to 21, 1957, Tahoe Tavern, Lake Tahoe. Chairman: C. M. Blumenfeld, M.D., 4700 Parkridge Road, Sacramento.

Contact: One of the chairmen listed above, or Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill Street, Los Angeles 13.

Medical Dates Bulletin

OCTOBER MEETINGS

CALIFORNIA MEDICAL ASSOCIATION second annual Conference on Physicians and Schools, Hacienda, Fresno, October 19 to 20. Contact: Robert L. Thomas, assistant executive secretary, California Medical Association, 450 Sutter St., San Francisco.

ALAMEDA-CONTRA COSTA DIABETES ASSOCIATION one-day Symposium on Oral "Insulinoids," October 22, Highland-Alameda County Hospital, Oakland. Contact: Institute for Metabolic Research, Highland-Alameda County Hospital, Oakland.

ORTHOPAEDIC HOSPITAL and RANCHO LOS AMIGOS RESPIRATORY CENTER jointly sponsor "A Seminar in Comprehensive Patient Care for Selected Neuromuscular Disabilities," October 22 to 26. All-day sessions beginning at 9:00 a.m. and one evening session, October 24. Contact: C. L. Lowman, M.D., Orthopaedic Hospital, 2400 S. Flower St., Los Angeles, or John Affeldt, M.D., Rancho Los Amigos, Hondo, Calif.

LETTERMAN ARMY HOSPITAL "Present Concepts in Internal Medicine," 8:00 a.m. to 4:30 p.m., October 29 to November 2. Contact: Major Max E. Knickerbocker, MSC, Chief of Education and Training Branch, Letterman Army Hospital, San Francisco.

NOVEMBER MEETINGS

LOS ANGELES UROLOGICAL ASSOCIATION Postgraduate Assembly, Ambassador Hotel, Los Angeles, November 12 to 16. Contact: Miss Vesta Fitzsimmons, executive secretary, 6253 Hollywood Blvd., Los Angeles 28.

VETERANS ADMINISTRATION HOSPITAL Conference on Pulmonary Diseases, each Thursday. Contact: William R. Haas, M.D., director, Professional Services, Veterans Administration Hospital, Oakland, Calif.

SONOMA COUNTY HEART ASSOCIATION Cardiovascular Symposium presented in cooperation with University of California Medical Extension, and Stanford University School of Medicine, Odd Fellows Hall, Santa Rosa, November 14. Contact: Thomas M. Torgerson, M.D., president, Sonoma County Heart Association, P. O. Box 844, Santa Rosa, Calif.

CITY OF HOPE MEDICAL CENTER symposium on "Newer Developments in the Diagnosis and Management of Can-

cer," November 14, 15, 16. Contact: Julian Love, M.D., Director, Division of Postgraduate Medical Education, City of Hope Medical Center, Duarte.

First annual Samuel H. Golter Lecture sponsored by the Medical Research Institute of the CITY OF HOPE MEDICAL CENTER: "Current Status of Myeloproliferative Disorders" by William Dameshek, M.D., Professor of Medicine, Tufts University School of Medicine, Boulevard Room, Ambassador Hotel, Los Angeles, 8:00 p.m., November 15.

INTERIM SESSION, AMERICAN COLLEGE OF CHEST PHYSICIANS, Benjamin Franklin Hotel, Seattle, Washington, November 25 to 26. Contact: Murray Kornfeld, executive director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

CALIFORNIA CONFERENCE OF LOCAL HEALTH OFFICERS semi-annual meeting, Sacramento, November 27 to 28. Contact: Donald G. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley.

1957 MEETINGS

AMERICAN BOARD OF SURGERY examination, Part II, Los Angeles, January 14 and 15; San Francisco, January 17 and 18.

SOUTHERN CALIFORNIA CHAPTER, AMERICAN COLLEGE OF SURGEONS, Biltmore Hotel, Santa Barbara, January 18, 19, and 20. Contact: Max R. Gaspar, M.D., Secretary-Treasurer, 211 Cherry Avenue, Long Beach 2.

CALIFORNIA RURAL HEALTH COUNCIL Third Annual Conference on Rural Health, January 25 and 26, Hotel Senator, Sacramento. Contact: Glenn Gillette, associate director, Public Relations, California Medical Association, 450 Sutter Street, San Francisco.

AMERICAN FEDERATION FOR CLINICAL RESEARCH, Wednesday afternoon and Thursday morning, January 30 to 31, Golden Bough Theater and La Playa Hotel, Carmel.†

WESTERN ASSOCIATION OF PHYSICIANS, Wednesday morning and Friday afternoon, January 30 and February 1, Golden Bough Theater, La Playa Hotel, Carmel.†

WESTERN SOCIETY FOR CLINICAL RESEARCH, Wednesday afternoon, Thursday and Friday mornings, Golden Bough Theater and La Playa Hotel, Carmel.†

SOCIETY OF GRADUATE SURGEONS OF LOS ANGELES COUNTY Surgical Forum, March 4 to 8, Ambassador Hotel, Los Angeles. Contact: Wm. F. Roe, M.D., 14431 Hamlin St., Van Nuys, Calif.

REGIONAL MEETING INTERNATIONAL COLLEGE OF SURGEONS, Santa Barbara, California, April 1 to 2. Contact: Ross V. Parks, M.D., 1930 Wilshire Blvd., Los Angeles 57.

LETTERMAN ARMY HOSPITAL "Surgery in Acute Trauma," 8 a.m. to 4:30 p.m., April 1 to 3.‡

LETTERMAN ARMY HOSPITAL "Oral Surgery," 8 a.m. to 4:30 p.m., April 22 to 26.‡

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles, April 28 to May 1. Contact: John Hunton, executive secretary, 450 Sutter St., San Francisco 8, or Ed Clancy, director of Public Relations, 417 S. Hill St., Los Angeles 13.

WESTERN BRANCH, AMERICAN PUBLIC HEALTH ASSOCIATION annual meeting, Lafayette Hotel, Long Beach, May 29 and June 1. Contact: Mrs. L. Amy Darter, Secretary-Treasurer, State Dept. Public Health, 2151 Berkeley Way, Berkeley.

† For information contact: Joseph Ross, M.D., associate dean, UCLA Medical Center, Los Angeles 24.

‡ Contact: Major Max E. Knickerbocker, MSC, Chief of Education and Training Branch, Letterman Army Hospital, San Francisco.



THE PHYSICIAN'S *Bookshelf*

MEDICAL PARASITOLOGY—For Medical Students and Practicing Physicians—2nd Edition—William G. Sawitz, M.D., Professor of Parasitology, Associate in Medicine, The Jefferson Medical College of Philadelphia. The Blakiston Division, McGraw-Hill Book Company, Inc. New York, 1956. 342 pages, \$6.00.

The first edition of this text published six years ago was very favorably received and many teachers of parasitology in medical schools and practicing clinicians found it worthy. This new edition has been increased from 296 to 342 pages. On the whole the second edition is quite similar to the first. A few new features have been added which considerably enhance the value and usefulness of the text. The presentation of material follows the usual pattern in books dealing with medical parasitology. There are chapters dealing with the important protozoa, helminths and arthropods which are associated with disease in man. These are followed by a rather extensive section on treatment of the various parasitic diseases. This same section includes, as well, a discussion of arthropod infestations wherein the harmful effects produced by insects and arachnids and the measures which should be taken to counteract these harmful effects are described. There is a short but helpful section on some of the insecticides currently in general use. For the second edition the author has added a section of some 17 pages which is designated as "Synopsis." There is a brief introduction to this section which many authors would place at the beginning of their books instead of at the end. As part of the "Synopsis" there are tabular or diagrammatic presentations of "Life Cycles of Intestinal Parasites," "Sites of Infection by Parasites" and "Diagnostic Material and Stage of Parasite Found." In addition there is a helpful discussion of the characteristic blood changes which occur in parasitic infections.

Standard procedures and methods employed in the laboratory diagnosis of parasitic infections are presented in a short section. The method of preparation of only one culture medium for *Entamoeba histolytica* is given. It would have been helpful to include an all-liquid type of medium. Although the Army Medical School (AMS) technique for the recovery of schistosome eggs from feces is included in the technical section it is unfortunate that the formalin-ether-sedimentation procedure (after Ritchie) also developed in an Army laboratory (406 MGL) was not included as well. This latter method is a highly efficient centrifugation-sedimentation technique in general use in many diagnostic laboratories. The book concludes with a vocabulary of technical terms. If pertinent the etymological derivation for each term is indicated. This is a most useful aid to the medical student who often approaches the terminology of the parasites of man with a sense of frustration and defeat.

Certain sections of the textual parts of the book have been expanded but in the main there are no extensive additions. For example there is a fuller description of the clinical aspects of amoebiasis and there have been additions to the

section on toxoplasmosis. There are a large number of drawings throughout the book giving the structural and differential-diagnostic features of the various parasites. From the student's standpoint this is one of the most helpful aspects of the text. The drawings on the whole are excellent—some additional figures have been added. It is good to find that the drawing of *Isospora hominis*, the procercoid larva and the sparganum of *Diphyllbothrium latum* and the unilocular cyst of *Echinococcus granulosus* have been redone. The drawings of the eggs of *Clonorchis sinensis* and *Heterophyes heterophyes* are poor and misleading.

The book is intended primarily for medical students and for clinicians. The professional parasitologist and the laboratory worker who is responsible for the examination of clinical materials would find it of limited use. No doubt the author would agree with this since it was his intention to provide a practical text for courses in medical parasitology in our schools of medicine and for clinicians to aid them in the diagnosis and treatment of parasitic infections. The text is concise and to the point. Taxonomy is kept to a minimum and only that amount of zoologic information is presented to permit adequate orientation with regard to diagnosis, pathogenesis and epidemiology.

There is no doubt that this second edition will receive continued favor by students, instructors and clinicians. Anyone searching for a most informative concise and practical presentation of medical parasitology would do well to acquire this book.

* * *

PROGRESS IN HEMATOLOGY—Volume 1—1956—Edited by Leandro M. Tocantins, M.D., with 27 contributors. Grune & Stratton, Inc., 381 Fourth Ave., New York 16. 336 pages, \$9.75.

This volume joins the many Reviews and Advances now appearing with 16 sections on various hematologic subjects. Whatever the editor's intention, he has called upon outstanding workers who have reviewed their particular fields. Among the articles of general interest are those on intrinsic factor and B₁₂ interrelationships, treatment of hypochromic anemia with parenteral iron, life span of erythrocytes, abnormal hemoglobins, the autoimmune thrombocytopenias, the blood in systemic lupus erythematosus, the chemotherapy of leukemia, agammaglobulinemia and others. The papers by Tocantins' group are rather restricted in scope (local factors in upper gastrointestinal bleeding, radio-gold in acquired hemolytic anemia) and might better have been submitted to a journal of hematology. The volume is well printed with good illustrations although the publisher included 20 extra pages of one section. The book is highly recommended and will be of interest to the general physician, pediatrician (exchange transfusion), surgeon (surgery in hemophilia), obstetrician (acute fibrinogen deficiency), hematologist, laboratory and research worker (leukocyte metabolism and recovery from radiation). It is hoped that further numbers will appear.

MENTAL HYGIENE IN PUBLIC HEALTH—Second Edition—Paul V. Lemkau, M.D., Professor of Public Health Administration, Division of Mental Hygiene, Johns Hopkins University, McGraw-Hill Book Company, Inc., New York, 1955. 455 pages, \$8.00.

This is the second edition of this well-known book dealing with the public health aspects of psychiatry, the first edition having appeared six years ago. There is considerable new material and revision of the other material, and the book is thoroughly up-to-date. The author, who is a professor in this subject at Johns Hopkins, shows a thorough knowledge of the subject and his whole approach seems to be largely along lines laid down by the late Adolph Meyer who, for so many years, was Professor of Psychiatry at Johns Hopkins and labeled by many as the father of American psychiatry. The book is divided into two parts—Part One discusses The Place of Mental Hygiene in Public Health, and Part Two, The Development of the Individual. The author starts out with the idea that every human being is unique, but there are certain rather common characteristics of what we call personality. He emphasizes that "All our human capacities are dependent upon genetic factors," and "The personality at any moment is the result of two types of influence: (1) The constitution of the individual; (2) the experience he has passed through since his genetic future was sealed at the moment of conception." Discussion follows of the relations of heredity and environment (physical, psychological, sociological) in line with the best thinking of psychiatry. In his early discussion of the prevention of mental illness the author emphasizes two important approaches—" (1) the protection of the brain from damage and the promotion of good general health; (2) efforts aimed at the healthy assimilation of life experiences into the personality structure of the individual as these experiences are occurring." He also goes on to state, "Mental hygiene concerns itself with the prevention of mental illnesses, the promotion of mental health, and, together with psychiatry, with early treatment to arrest behavior disorder in its early stages." Little is said of the role of heredity as a specific factor in causing mental disease or mental defect until one gets to Chapter 9, entitled: The Preindividual Factors: Eugenics. Here one finds an excellent discussion of the problem of eugenics and the role of heredity in the production of both desirable and undesirable mental states. The author emphasizes that normal traits are usually due to dominant qualities, whereas "hereditary abnormalities are usually recessive." He states that in many of the serious types of inherited mental conditions the individual dies before reaching the age of reproduction; therefore, there is no point in sterilizing such individuals. For the other conditions which are due to recessive genes from both parents who are themselves normal, he points out that there is no way of identifying such persons in our present state of knowledge. He suggests that we may in time come to spot such individuals and that possibly electroencephalography is giving us a clue as to persons who may be carrying the recessive genes of epilepsy. He is pessimistic about the present application of eugenic knowledge in the United States, and concludes that we must look forward to a progressive decrease in the average intelligence of the race until such time as we really attack this problem from the eugenic standpoint. On the positive side it is pointed out that dispersion of the population will result in fewer marriages where the same recessive gene will occur in both parents—hence a lessened incidence of the defects due to such recessive genes. He also emphasizes the well-recognized idea that if we have large families from desirable stock and smaller families of undesirable stock, the net result will be beneficial from the hereditary standpoint. He also mentions something probably not known to most physicians, that in West Germany, at the present time, the public

health agencies can check through marriage licenses and family histories. "When such an individual wishes to marry, the health officials have the right to call him in, to persuade him to tell his proposed marital partner of the situation, and to counsel with both regarding the possibility of passing on defective germ plasm. Originally, the health official had the legal power to stop the marriage, though this is no longer constitutional in West Germany. No such program is known to exist elsewhere." There is a brief discussion of birth control as a means of both increasing the families of desirable parents and decreasing or preventing any children at all in couples where there is strong likelihood of inheritance of undesirable mental qualities. It is pointed out that some nations have even legalized abortion as a eugenic measure. The first part of the volume deals largely with specific problems of organization and function of mental hygiene in the field of public health, together with the techniques to be employed. There are three chapters on the attack of the problem at national, state and local levels.

The rest of the book is taken up with the development of the personality, having chapters for the various stages of development of the personality, beginning with the prenatal period and ending up with the period of old age. These are excellent general summaries of the subject, but necessarily have to discuss in a single chapter subjects which often fill one or several volumes. On the whole, the author has done well in the material selected and presented. There is an interesting appendix which discusses the classification of psychopathological states for the public health officer, and there is a 24-page listing and evaluation of visual aids. The book is a well-rounded, up-to-date discussion of mental hygiene in public health, and can be recommended to anyone who wishes to read a volume on this subject.

* * *

CLASSICS OF BIOLOGY—August Pi Suner. Philosophical Library, New York, 1955. 337 pages, \$7.50.

Dr. Stern has done the English speaking public a real service in giving us this translation of Dr. August Pi Suner's admirable compilation of *Classics of Biology*. The scheme followed with each of the many chapters is to present first an "orientation" essay on the subject to be considered such as Biocatalysts, Heredity, Individual and Species, etc., followed by abstracts from the works of great students concerned with that topic. Thus under Individual and Species there are quotations from the writings of Linnaeus, Cuvier, Darwin, Huxley, De Vries and Woodruff. There are 16 such chapters containing a storehouse of information on the fundamental aspects of biology. This is indeed a masterly compilation which must have involved endless reading, thought, and judgment on the part of the compiler.

* * *

THE OFFICE ASSISTANT—In Medical or Dental Practice—Portia M. Frederick, Instructor, Medical Office Assistant, Long Beach City College; and Carol Towner, Executive Assistant, Department of Public Relations, American Medical Association, W. B. Saunders Company, Philadelphia, 1956. 351 pages, \$4.75.

This small book will be of inestimable value to anyone desirous of capably assisting in a physician's office. It has considerable value to any physician who would like a reliable guide for his office assistant. Written clearly and concisely, emphasis is properly placed on the public relations aspects of the assistant's position. Considerable detail is also offered in discussion of ethics, technique of reception, making appointments, keeping records, billing and assisting in examinations, the laboratory and with medications. Even the complex subject of insurance is well covered, although one could wish for more detail here.

This book should be in every office and might well be required reading for all office assistants.

THE INTERPRETATION OF THE UNIPOLAR ELECTROCARDIOGRAM—Gordon B. Myers, M.D., Professor of Medicine, Wayne University College of Medicine, The C. V. Mosby Company, St. Louis, 1956. 164 pages, \$4.75.

This manual represents a carefully edited compilation of lecture material the author has used for a number of years as part of a postgraduate course in electrocardiography and it follows that emphasis is laid on a stepwise didactic approach. It is expanded under five major headings which include consideration of the basic electrical phenomena and their relation to the electrocardiographic deflections; procedure for interpretation; an analysis of QRS-T in normal and abnormal tracings; disorders involving rate and rhythm and a final summary of QRS-T patterns. Since the standard limb leads are not discussed, the physical considerations are held to a direct, uncomplicated minimum which are, however, wholly adequate to explain the electrical events described. The author begins by defining all portions of the electrocardiogram and what each represents, together with a description of how to evaluate the technical aspects of the record. Thus, as they subsequently encounter the chapter on the origin and form of the QRS-T, the illustrations may be fairly easily read even by those relatively inexperienced in electrocardiographic interpretation. A series of schematic drawings of the heart illustrate time-sequence relationships as they correlate the direction and spread of electrical activity as well as its speed and duration with sequential electrocardiographic records at progressive time intervals. This technic is extensively and successfully exploited to give the reader a strong sense of the dynamism involved in the electrocardiographic tracing. The author then assembles all of the previously described phenomena in a final chapter of readily usable summary.

The Manual has the advantages of simplicity, lucidity and thoroughness, and has been arranged by a teacher with large experience in the field and one who is clearly responsive to the needs of his students. One would wish however, to see mention made of the cardiographic findings in pulmonary embolism and more adequate discussion of the value of voltage measurements in ventricular hypertrophy. Additionally, this reviewer feels the large pages and processed, typewriter-like printing makes for reader fatigue. A more serious drawback, and one which contributes further to reader fatigue, is the absence of illustrative tracings to accompany the abnormal conditions under discussion. Even though this manual was intended to be produced inexpensively, it fails to a degree in its purpose as a teaching instrument by this omission. In the same vein, a pertinent bibliography would enhance further its value and would hardly add significantly to its cost.

Despite the above comments, the authoritative discussion by such an experienced man as Dr. Myers, makes this manual a valuable addition to the field of cardiology.

* * *

ELECTROCARDIOGRAPHY—Fundamentals and Clinical Application—Second Edition—Louis Wolff, M.D., Visiting Physician, Consultant in Cardiology and Chief of the Electrocardiographic Laboratory, Beth Israel Hospital; Assistant Clinical Professor of Medicine, Harvard Medical School. W. B. Saunders Company, Philadelphia, 1956. 342 pages, 199 illustrations, \$7.00.

Wolff's book is a significant contribution and will be warmly welcomed by physicians interested in learning electrocardiography. The second edition is considerably expanded over the first one and has major changes. A section on arrhythmias and rewriting of the text to emphasize a knowledge of the spatial orientation of the cardiac vector contributes to an understanding of the electrocardiogram. The author is interested in avoiding a purely empiric interpretation of the electrocardiogram and his combination of

vector analysis with electrocardiographic interpretation clarifies the subject considerably. The author is a man who has had wide experience in his field and a good many clinical correlations are scattered through the text.

The strongest chapters include the introductory ones on electrophysiology and electrical axis, the discussion of myocardial infarction, ventricular hypertrophy, and bundle branch block.

The sections on electrolyte imbalance, pericarditis, and pulmonary embolism are relatively sketchy, although the basic data is presented. These sections could be more comprehensive; for example, acute pericarditis is illustrated by only one electrocardiogram and no serial tracings are shown and the total discussion covers only 2½ pages. The section on the arrhythmias is compact but relatively brief so that variations of the ordinary rhythms could not be discussed in detail; for example, the text on premature beats is approximately 3½ pages. The text on atrial ventricular block, exclusive of the figures and clinical data, also was quite brief.

The book can be highly recommended because of its strong sections and because of its vector orientation. The text is lucid, the illustrations are clear, and the electrocardiograms shown are typical and well described.

* * *

HISTAMINE—Ciba Foundation Symposium—Editors: G. E. W. Wolstenholme and Cecelia M. O'Connor. Little, Brown and Company, Boston, 1956. 472 pages, \$9.00.

This book is another in the series of important publications of conferences sponsored by the CIBA Foundation. It is somewhat unusual in that it consists of reports of two conferences in a single volume: The Symposium of the Physiological and Pharmacological Societies at the Wellcome Foundation and a Symposium held at the CIBA Foundation. The participants at the conferences include distinguished pharmacologists and physiologists, as well as clinicians, from the Americas, from England and from Continental Europe. The presentations at both conferences consisted of some of moderate length on highly specialized and technically treated aspects of the histamine problem, as well as short reports on minor aspects. The groups of discussions are followed by a detailed and complete summary of the discussion that occurred following each group of presentations.

Scientific findings that are presented are important ones from the point of view of fundamental physiology and pharmacology, but much of the material is not of immediate concern to the practicing physician. It is apparent that medicine talks much and does much about histamine without understanding clearly its mechanism of production, release and destruction, for if these distinguished investigators are relatively humble about their knowledge so should necessarily be the practicing physician.

Those with good background should profit much from this book; it is not a source which will at the same time supply background and bring the novice up to date.

With respect to the use of antihistaminic drugs, a short report by J. J. Reuse from the University of Brussels is of interest. Antihistaminics act strongly to block the effects of endogenous histamine, but doses must be much higher to counter the effects of histamine of endogenous origin, particularly that released by certain antigens. This may shed some light on the irregular responses noted under clinical conditions.

In summary, this book is likely to be of much value to physiologists and pharmacologists, a source of guilt-feelings to the allergist, and of relatively little interest to practicing physicians.

SCALPEL—Men Who Made Surgery—Agatha Young. Random House, New York, 1956. 331 pages, \$5.00.

This fascinating book on medical history written by a laywoman for laymen provides entrancing reading for members of the profession she describes so vividly, so frankly, but withal most sympathetically. To be sure, some of the portrayals concern themselves more with the intimate details of the personal eccentricities and peculiarities of her subjects than with their scientific contributions—no doubt quite acceptable to the layreader but somewhat disappointing to the scientist. The book's lively interest, however, lies not only in the development of techniques, but also in the very colorful descriptions of the manners and mores of the people at the times when her heroes lived. In the days of Vesalius, Paré, Harvey and Hunter, yet unborn were those twin marvels of modern civilization, unlimited water supply and sanitary sewage disposal, which today make living even in cities of 6,000,000 people a matter of miraculous bodily comfort and unassailed special senses. As one reads her pictures of primitive living and primitive passions one can hardly credit the appalling filth and stench that assailed one's nostrils from the streets, hospitals, houses, and even from the bodies of human beings that characterized the cities and towns of the Sixteenth Century. Difficult to understand also is the savage and inhuman cruelty of the religious bigots responsible for the massacre on St. Bartholomew's Eve, the intimate details of which the author presents in vivid fashion. The conditions prevailing in the hospitals and anatomical laboratories of the time must have discouraged many of tender feelings from pursuing the profession of medicine.

The reader of this book will be amply repaid in a better understanding of the development of anesthesia, of antisepsis and asepsis, of the control of hemorrhage, and of the development of safe and sane operating which has made possible the truly great triumphs in the surgery of the present day. The pioneers responsible for these developments deserve our unlimited admiration for their courage and persistence in the face of the stubborn opposition of blind ignorance that impeded their progress at every turn.

* * *

TREATMENT OF HEART DISEASE—A Clinical Physiological Approach—Harry Gross, M.D., F.A.C.P., and Abraham Jexer, M.D., both Assistant Clinical Professors of Medicine, Columbia University College of Physicians and Surgeons, W. B. Saunders Company, Philadelphia, 1956. 549 pages, 91 figures, \$13.00.

This book on the treatment of heart disease is primarily a textbook of cardiology with more emphasis on treatment than in the average text. The authors are clinical cardiologists who have compiled existing knowledge of heart disease into a readable, practical discussion of the subject. They have not introduced any new concepts nor do they present any original data. The sections on digitalis, quinidine, the arrhythmias and congestive heart failure are particularly complete and the bibliography at the end of each chapter is current and valuable.

The authors offer a good section on surgery and the cardiac patient, a discussion of emotions, rehabilitation, a chapter on "Living With a Sick Heart," and an appendix dealing with diets, recipes, and a table of the sodium and potassium content of various foods. These last are most helpful and reveal the authors' long experience with cardiac patients. The book will prove a useful addition to the cardiac literature but it is doubtful that it will replace the existing texts by Friedberg, White and Wood. It is recommended to physicians as an up-to-date appraisal of cardiology by experienced clinicians whose emphasis is eminently practical but, at the same time, correlates physiological concepts as the basis for the various forms of treatment.

THE RECOVERY ROOM—Immediate Postoperative Management—Max S. Sadove, M.D., Professor of Surgery (Anesthesia); and James H. Cross, M.D., Clinical Assistant Professor of Surgery; both of the University of Illinois College of Medicine; with contributions by 24 authors, W. B. Saunders Company, Philadelphia, 1956. 597 pages, \$12.00.

The postoperative recovery room has become a very essential part of the modern hospital. Doctors Sadove and Cross present an exhaustive review of all aspects of recovery room activity, including design and equipment, staffing, management and operational policies. However, the discussion goes beyond the actual physical setup of this area, and covers all phases of management of the severely ill patient, pre-operative and nonoperative as well as postoperative. In the authors' concept, the "recovery room" becomes an intensive therapy unit in which all critically ill patients can receive specialized and personalized care.

The recovery or intensive therapy room is discussed from the standpoint of all concerned—the building committee, hospital administration, anesthesiologist, nursing personnel as well as the physicians of the various specialties whose patients come under the care of the unit.

The chapter entitled "Principles of Recovery Room Management" discusses pain and its control, analgesics, hypnotics and antibiotics that may need to be administered in the intensive therapy unit, and methods of administration. Other chapters deal with the problems of circulatory, respiratory and nutritional complications; postoperative care of the patient of the various surgical specialties; management of medical problems; and nursing care.

The authors, with contributions by 24 other specialists, have assembled a comprehensive volume that covers the subject exhaustively. It is well written and is a must reading for hospital personnel contemplating the set-up of an intensive therapy unit, or the reorganization of one already existing. The book also contains information of value to general practitioners, surgeons, internists, anesthesiologists, and nurses. It should make a valuable addition to libraries of nursing schools, hospitals, residency training programs and the individual physician.

* * *

DISEASES OF THE NOSE, THROAT AND EAR—A Handbook for Students and Practitioners—Sixth Edition—I. Simon Hall, M.B., Sh.B., F.R.C.P.E., F.R.C.S.E., Surgeon to Royal Infirmary, Edinburgh, E. & S. Livingstone, Ltd., Edinburgh. Distributed in U.S.A. by The Williams and Wilkins Company, Baltimore, 1956. 463 pages, \$4.75.

The prospective purchaser of this volume should know of the author's statement under the heading of "Preface to Sixth Edition." This statement reads: "Since the publication of the Fifth Edition, there have been few major changes in management of this specialty. There are, however, certain trends and, where possible, these are reflected in changes in the text. Considerable trouble has been taken to avoid enlargement of the book and it remains the same size as in previous editions."

For those who have not had an opportunity to see and read the previous editions, I would strongly recommend that they procure this Sixth Edition. It is a charming compilation of important facts, and singularly free of unnecessary fancies.

The method of presentation is concise, direct, and easily followed. For the American, certain of the phraseology is delightful, and, by and large, terms not familiar to both sides of the Atlantic and which could be misconstrued have been eliminated.

The size of the book is definitely misleading. It seems almost impossible that such a small sized volume could contain such worthwhile fundamental background and current information. This volume should be in the presence of, or accessible to, every practicing otolaryngologist.

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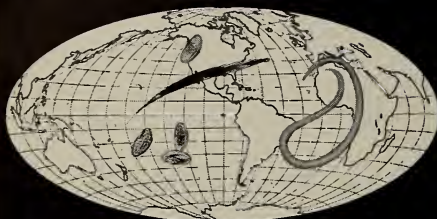
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Mechanization Blamed for Farm Accident Increase

When the farmer stopped having to rest his horses periodically, he also stopped resting himself. This failure to observe rest periods and the accompanying fatigue was blamed for many farm accidents.

Dr. Franklin H. Top, Iowa City, pointed out that deaths from farm accidents in 1954 totaled 14,000, a rate of 61.7 deaths per 100,000 farm residents. Motor vehicle accidents were responsible for the greatest share, followed by "work" accidents, including accidents from farm machinery. Among major industries farming ranks third in the number of accidental deaths per 100,000 workers, he said in a recent issue of the *Journal of the American Medical Association*.

Dr. Top said the high level of work accidents on the farm is partially due to the shift from horse-drawn to motor-driven machinery.

"Horses had to be rested periodically, and with this came rest for the driver. Furthermore, the same horses could not be worked 10 to 15 hours a day for several days," he said, adding that it is not unusual for a farmer to spend more than 10 hours a day in the field with a tractor, especially if he gets a late start because of weather or soil conditions.

Studies have shown that there is a peak mid-morning and midafternoon period during which the majority of accidents occur. Thus a midmorning break, like that given in most factories, is a good idea for the farmer, Dr. Top said.

Carelessness in the handling of machinery and poor safety design also have contributed to farm accidents. Only in recent years have manufacturers been interested in safety of farm machinery, but the safety devices now provided are not always appreciated by the farmer. In many instances, accidents have been attributed to the farmer's removal of safeguards on machinery.

Tractor accidents account for 700 deaths a year, Dr. Top said. One thinks of a tractor as used principally on the land, but many of the deaths related to tractors do not occur in actual farm work. In recent Minnesota and Iowa studies, approximately one-third of the tractor fatalities occurred in highway accidents.

Surprisingly, a fair proportion of the deaths do not occur among operators of the machine, he said. Wisconsin and Ohio studies over a year indicated that roughly 11 per cent of the victims were children under five years of age and an additional 5 per cent were between the ages of five and nine years.

Much work has been done to inform agricultural workers of the hazards of farm machinery, but as with the automobile, the advice must be heeded, Dr. Top said. The agricultural worker must realize that accidents can happen to him.

Physician Gives Advice on Childhood Convulsions

Convulsions in children are alarming, but when they occur the best thing to do is to "keep your head" and call your doctor, a Milwaukee pediatrician said recently.

It is essential to protect the child from injuring himself and others, but care must be taken not to injure him in the process.

"Many more children have been injured by well-meaning parents or helpers than have injured themselves in a convulsion," Dr. M. G. Peterman said, adding that he had seen more children burned than helped by being immersed in hot water.

When the doctor arrives and starts asking questions instead of treating the child, don't be alarmed, he said. The convulsion will probably be over by then, but the underlying cause of the convulsion must be found. A convulsion is a symptom, not a disease, and treatment must be aimed at the cause.

For many years convulsions were considered as "a necessary evil of childhood," Dr. Peterman said in a recent issue of *Today's Health*, published by the American Medical Association. They were attributed to a delay in the development of the central nervous system, delayed eruption of teeth, worms, and over-indulgence in certain foods.

A 25-year study of more than 3,000 children produced a new concept of convulsions, he said. A convulsion indicates an acute disturbance, irritation, infection or temporary upset of the brain. The study showed that certain diseases which are more prominent during certain periods of childhood accounted for many of the convulsions. For instance, in the first month of life, the most common cause was disturbance of the brain during or shortly after birth.

In the early months of life the most common causes are acute infection including contagious diseases, infantile tetany or disturbance of calcium metabolism, and brain injury at birth. As age increases epilepsy is added to the list. Nearly half of all convulsions make their first appearance when the child is from six to 36 months old, he said. Although serious, convulsions appear in only about one per cent of sick children.

A child may recover from a convulsion and never have another. Yet the questions of the cause, whether he will have another and what can be done to prevent it remain. The family doctor, who is familiar with the child's history and problems, is the best person to answer these questions, he said. If the parent can give him an accurate and complete history and an intelligent description of the events before and during the convulsion, the doctor will probably reach a diagnosis of the cause. If he cannot, he will refer the child to a specialist in convulsive disorders, Dr. Peterman said.

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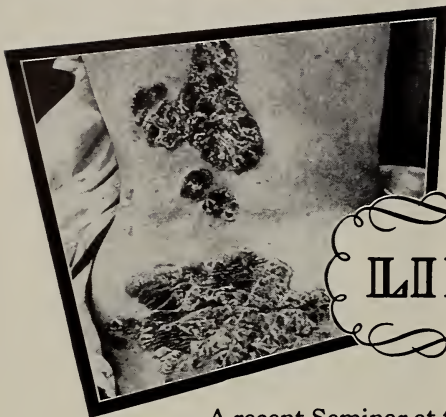


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1. Seminar: Psoriasis: N. Y. Academy of Sciences, Oct. 17, 1955.
2. Harris, O. J., et al. The Treatment of Psoriasis with Whole Defatted Pancreatic Substance. New York Physician & American Medicine, 37:4 (Nov. 1951).
3. Harris, O. J., et al. Whole Defatted Pancreatic Substance in The Treatment of Psoriasis. Jrl. Lancet, 72:7 p: 328-330 (July 1952).
4. Combes, F. C., Management of Psoriasis As a Metabolic Lipid Disturbance. New York State Journal Medicine, 54:13 (July 1954).

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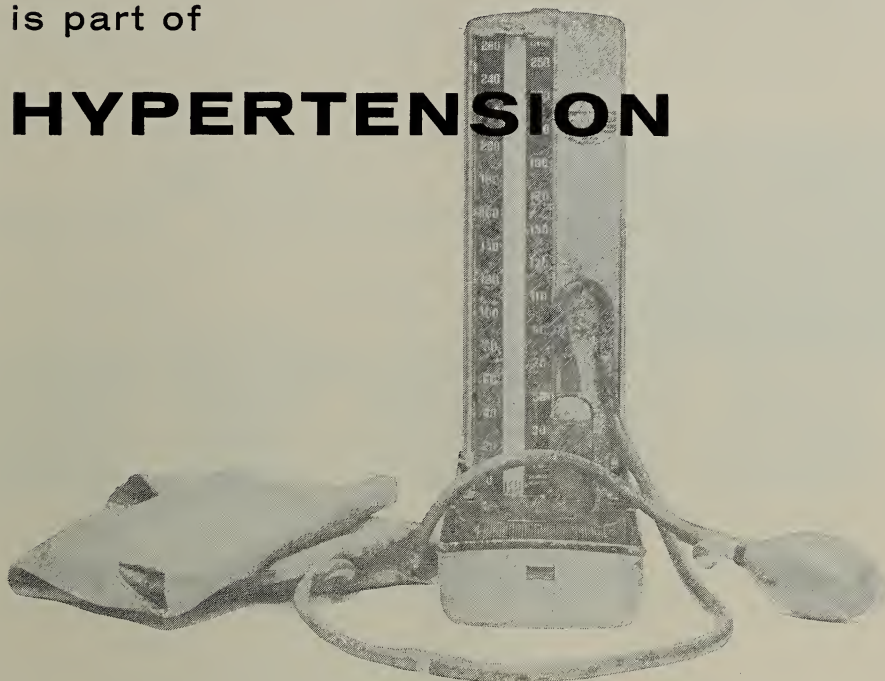
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Auto Passengers Advised To Protect Themselves

It's better to lose a friend than to lose your life, a health and safety consultant recently stated.

Dr. Carl J. Potthoff, in his safety and first aid column in *Today's Health*, published by the American Medical Association, said people should not take risks with an irresponsible automobile driver, even if it means offending him.

"Although statistics from nationwide experience are not available, it is possible that half or more of nonpedestrian traffic accidents that result in death or permanent injury happen to people whose only error lay in accompanying others who did the driv-

ing," he said. "Some of these drivers pay little attention to their responsibility for passengers.

"Sometimes we do not like to reject rides with such drivers; we do not like to remonstrate with the speeder; we do not like to request that a reckless driver stop so that we can leave the car.

"We hesitate to offend him, but he is entirely willing to jeopardize our life.

"Consider the passengers who are driving to or from a fishing or vacation resort, the teen-age girl who is bound to or from a dance, the group that is going to or from a sports event, a convention, a gala meeting. If you study newspaper accident accounts, you will quickly note that it is the passengers who

(Continued on Page 80)



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Auto Passengers Advised To Protect Themselves

(Continued from Page 72)

often pay the price for the careless driving of others."

Dr. Potthoff said parents and safety educators should teach children how to deal with irresponsible drivers, how to protect themselves when there are "social pressures" toward accepting dangers.

If properly prepared, they will have through life a "base line" for dealing with these situations, he said, explaining: "The base line is that self-protec-

tion is more important than the esteem of the irresponsible."

When other approaches fail, he concluded, "forthright action for self-protection should be taken."

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Skin Tests Recommended for Allergic Infants

Children under two years of age are not too young to undergo skin tests for allergy. In fact, the sooner procedures for diagnosing the cause of allergy are begun the better, three physicians said recently.

If the cause of the allergy is found early and treated—especially within the first five years of life—much can be done “to forestall or shorten the inroads of allergy in later years,” they said in a recent issue of the *Journal of Diseases of Children*, published by the American Medical Association.

Drs. Bret Ratner, New York; Lloyd V. Crawford, Memphis; and John G. Flynn, Salem, Massachusetts, studied 27 children under two years of age and 37 children who ranged in age from two to five years. They suffered from asthma, eczema, hay fever or hives.

The study showed that the majority of children reacted to more than one food, pollen or inhalant. In view of this, the authors said, “it is foolhardy to treat a young infant for only one or another obvious factor.” To achieve effective results, all of the child’s sensitivities must be considered in planning treatment.

Certain groups of foods, such as fish, eggs and

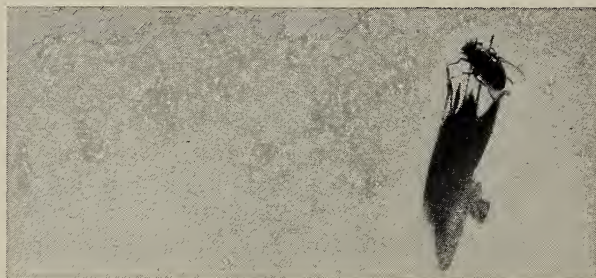
cereal grains, produced reactions very frequently. Milk and citrus foods also produced reaction. Chocolate, which has always been regarded as a frequent offender, produced reactions in only 11 per cent of the children. Milk sensitivity was only found in conjunction with other sensitivities.

The early age of onset of allergy in these cases did not appear to be influenced by heredity, they said. However, sensitization before birth, by the passage of undigested food antigens from mother to child, may explain the “explosive allergic” reaction that occurs in certain infants eating a food for the first time or coming in contact with persons who have handled or eaten the offending food.

There was a high rate of eczema among the children during the first year of life, with asthma and hay fever appearing as age increased. During the first five years they noted a gradual decrease in food sensitivity, a marked rise in pollen sensitivity, a consistently high rate of sensitivity to dust, feathers, cotton and other inhalants, and a moderate rate of sensitivity to molds.

The authors are from the pediatric and pediatric allergy departments of New York Medical College and Flower and Fifth Avenue Hospitals, New York.

Plan to attend California Rural Health Council—Sacramento (Hotel Senator) January 25-26, 1957.



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Helps In All These 7 Ways

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- Reduces nitroglycerin need
- Lowers blood pressure in hypertensives—
not in normotensives
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LOS ANGELES

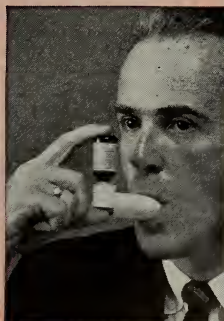
Dosage: One to two tablets q.i.d.,
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Octyl nitrite (1%) in aerosol solution

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Old Age Does Not Prevent Gallbladder Surgery

Old age alone does not necessarily prevent early surgical removal of gallstones which may become malignant, a Washington, D. C., surgeon said recently.

The risk of gallbladder surgery is about the same for persons over 60 as for those under 60, provided there are no other complications, Dr. Alec Horwitz said in a recent issue of the *Journal of the American Medical Association*. Of 300 consecutive gallbladder operations he performed, 67 were on persons over

60. There were no deaths, even among those with complications.

However, it is wise to eradicate gallbladder disease before old age overtakes the patient and before other diseases and complications occur, even when the gallstones produce no symptoms, Dr. Horwitz said, adding that he doubted if there is such a thing as a "silent" gallstone. Gallbladders with gallstones should be removed before they become "vocal," for when they begin to "shriek with malignant changes" it is often too late, he said.

(Continued on Page 88)

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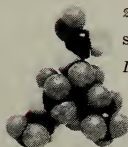
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THE MILTOWN MOLECULE

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Old Age Does Not Prevent Gallbladder Surgery

(Continued from Page 86)

There is a very great increase in the incidence of cholecystitis, common duct obstruction and cancer of the gallbladder in persons over 60. Delay in surgery must be avoided because the aged person deteriorates rapidly, he said. In acute cholecystitis remedial surgery should be done as soon as the diagnosis is established and the patient is ready for it.

In the urgent case quick treatment, gentle and rapid but unhurried surgery, smoothly efficient operating-room teamwork, and skillful anesthesia will be repaid by fewer deaths or serious illness. In fact, among his 67 aged patients undergoing and surviving surgery, 52 had associated diseases, including hypertension, coronary disease, diabetes mellitus, obesity, bleeding peptic ulcer and stomach cancer, and 23 had acute or chronic cholecystitis.

Dr. Horwitz is associate clinical professor of surgery at George Washington University School of Medicine.

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Formula for Pro-Acet Douche: Sod. Phos. 5.0%; Citric Acid 75 mg; Ascorbic Acid 100 mg; Biotin 0.02 mg; Riboflavin 0.02 mg; Thiamine 0.02 mg; Mononitrate U.S.P. 0.04 mg; Riboflavin U.S.P. 0.08 mg; Pyridoxine Hcl 0.04 mg; Vitamin B₁₂ U.S.P. 0.001 mg; Calc. Pantothenate 0.08 mg; Tween 80 10 mg; Sterox 54 mg; and Beta Lactose Po. 3.542 gm.

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(Alcohol content, 10%; sugar, 33¼%)

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BOOKS RECEIVED

ALCOHOLISM—Edited by George N. Thompson, A.B., M.D., F.A.C.P., Associate Clinical Professor of Neurology and Psychiatry, School of Medicine, University of Southern California, Los Angeles. Charles C. Thomas, Publisher, Springfield, 1956. 548 pages, \$9.50.

ATLAS OF ANATOMY, AN—Fourth Edition—J. C. Boileau Grant, M.C., M.B., Ch.B., F.R.C.S. (Edin.), Professor of Anatomy in the University of Toronto. The Williams and Wilkins Company, Baltimore, 1956. 634 figures, \$15.00.

CANCER OF THE LUNG: An Evaluation of the Problem—Proceedings of the Scientific Session, Annual Meeting, November 3-4, 1953. American Cancer Society, Inc. 527 West 57th Street, New York 19, N. Y., 1956. 322 pages.

CIBA FOUNDATION COLLOQUIA ON AGEING—Volume 2—Ageing in Transient Tissues—G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., Editor and Elaine C. P. Millar, A.H.W.C., A.R.I.C. Little, Brown and Company, Boston, 1956. 263 pages, \$6.75.

CLINICAL UROLOGY FOR GENERAL PRACTICE—Justin J. Cordonnier, M.D., F.A.C.S., Professor of Urology, Washington University School of Medicine, St. Louis. The C. V. Mosby Company, St. Louis, 1956. 252 pages, \$6.75.

DERMATOLOGY—Donald M. Pillsbury, M.A., D.Sc. (Hon.), M.D., Professor and Director, Department of Dermatology; Walter B. Shelley, M.D., Ph.D., Associate Professor of Dermatology; and Albert M. Kligman, M.D., Ph.D., Associate Professor of Dermatology, all from the University of Pennsylvania School of Medicine. W. B. Saunders Company, Philadelphia, 1956. 1331 pages, 564 figures, \$20.00.

ESSENTIAL UROLOGY—Third Edition—Fletcher H. Colby, M.D., Consultant, Massachusetts General Hospital; formerly Associate Clinical Professor of Genito-urinary Surgery, Harvard Medical School. The Williams and Wilkins Company, Baltimore, 1956. 656 pages, \$8.00.

HUMAN GENERATION—Conclusions of Burdach, Dolinger and von Baer—Arthur William Meyer, Professor Emeritus of Anatomy, Stanford University. Stanford University Press, Stanford, 1956. 143 pages, \$3.50.

INTERNAL MEDICINE—A Physiological and Clinical Approach to Disease—Robert P. McCombs, B.S., M.D., F.A.C.P., Professor of Graduate Medicine, Tufts University School of Medicine. The Year Book Publishers, Inc., Chicago, 1956. 706 pages, \$10.00.

INTERNAL SECRETIONS OF THE PANCREAS—Ciba Foundation Colloquia on Endocrinology—G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., Editor and Cecilia M. O'Connor, B.Sci. Little, Brown and Company, Boston, 1956. 292 pages, 100 illustrations, \$7.00.

J.A.M.A. CLINICAL ABSTRACTS OF DIAGNOSIS AND TREATMENT—Published with the approval of the Board of Trustees, American Medical Association—Intercontinental Medical Book Corporation, with Grune & Stratton, Inc., New York, 1956. 661 pages, \$5.50.

J.A.M.A. QUERIES AND MINOR NOTES—Published for the American Medical Association by the C. V. Mosby Company, St. Louis, 1956. 334 pages, \$5.50.

LABYRINTH, THE—Physiology and Functional Tests—Joseph J. Fischer, M.D., Clinical Professor in Otolaryngology, School of Medicine, Tufts University. Grune and Stratton, New York, 1956. 206 pages, \$6.00.

LECTURES ON THE SCIENTIFIC BASIS OF MEDICINE—Volume IV, 1954-56. British Postgraduate Medical Federation, University of London. The Athlone Press, 1956. Distributed in U.S.A. by John de Graff, Inc., 31 East 10th Street, New York 3, N. Y. 397 pages, \$6.50.

MANUAL OF THE COMMON CONTAGIOUS DISEASES, A—Fifth Edition, Thoroughly Revised—Philip Moen Stimson, A.B., M.D., Professor of Clinical Pediatrics, Cornell University Medical College; and Horace Louis Hodes, A.B., M.D., Clinical Professor of Pediatrics, Columbia University College of Physicians and Surgeons. Lea & Febiger, Philadelphia, 1956. 624 pages, 84 illustrations and 10 plates, 8 in color, \$8.50.

(Continued on Page 94)

BOOKS RECEIVED

(Continued from Page 93)

NEW BASES OF ELECTROCARDIOGRAPHY—Demetrio Sodi-Pallares, M.D., Chief of the Department of Electrocardiography at the National Institute of Cardiology of Mexico, Professor of Cardiovascular Clinics, National University of Mexico; with the collaboration of Royall M. Calder, M.D., Editor, English Translation, Clinical Professor of Medicine, Baylor University. The C. V. Mosby Company, St. Louis, 1956. 727 pages, 520 illustrations, \$18.50.

OBSERVATIONS ON KREBIOZEN IN THE MANAGEMENT OF CANCER—A. C. Ivy, Ph.D., M.D., Professor of Physiology and Head of the Department of Clinical Science, University of Illinois; John F. Pick, S.E., M.M., M.D., Head of Department of Plastic Surgery, Columbus Hospital, Chicago; and W. F. P. Phillips, M.D., Department of General Practice, St. Francis Hospital, Evanston. Henry Regnery Company, Chicago, 1956. 83 pages, \$2.50.

OCCUPATIONAL HEALTH NURSING—Mary Louise Brown, R.N., M.A., Assistant Professor of Public Health, Yale University School of Medicine; in association with John Wister Meigs, M.D., Associate Professor of Public Health, Yale University School of Medicine. Springer Publishing Company, Inc., 44 East 23rd Street, New York 10, N. Y., 1956. 276 pages, \$4.50.

PATHOLOGY AND SURGERY OF THE VEINS OF THE LOWER LIMB, THE—Harold Dodd, Ch.M. (L'pool), F.R.C.S. (Eng.) Surgeon to St. Mary's Hospital (London) Group; and Frank E. Cockett, M.S. (Lond.), F.R.C.S. (Eng.), Surgeon to St. Thomas's Hospital, London. E. & S. Livingstone Ltd., Edinburgh and London, 1956. Distributed in U.S.A. by Williams and Wilkins Company, Baltimore, 1956. 462 pages, \$12.50.

PULMONARY EMPHYSEMA—Edited by Alvan L. Barach, M.D., Clinical Professor of Medicine, and Hylan A. Bickerman, M.D., Assistant Clinical Professor of Medicine, both of Columbia University College of Physicians

and Surgeons. The Williams and Wilkins Company, Baltimore, 1956. 545 pages, \$10.00.

ROENTGEN SIGNS IN CLINICAL DIAGNOSIS—Isadore Meschan, M.A., M.D., Professor and Director of the Department of Radiology at Bowman Gray School of Medicine, Wake Forest College. With the assistance of R. M. F. Farrer-Meschan, M.B., B.S. W. B. Saunders Company, Philadelphia, 1956. 1,058 pages, 2,216 illustrations on 780 figures, \$20.00.

SLEEP—Marie Carmichael Stopes, Doctor of Science, London. Philosophical Library, New York, 1956. 154 pages, \$3.00.

STUDIES IN TOPECTOMY—Edited by Nolan D. C. Lewis, M. D., Carney Landis, Ph.D., D.Sc., and H. E. King, Ph.D. Grune and Stratton, New York, 1956. 248 pages, \$6.75.

SURGERY FOR GENERAL PRACTICE—Victor Richards, M.D., Professor of Surgery, Chairman of the Department of Surgery, Stanford University School of Medicine. The C. V. Mosby Company, St. Louis, 1956. 947 pages, \$17.50.

TEXTBOOK OF GYNECOLOGY—Fifth Edition—Emil Novak, A.B., M.D., D.Sc. (Hon.), F.A.C.S., F.R.C.O.G. (Hon.), Assistant Professor Emeritus of Gynecology, The Johns Hopkins Medical School; and Edmund R. Novak, A.B., M.D., F.A.C.S., Instructor in Gynecology, The Johns Hopkins Medical School. The Williams and Wilkins Company, Baltimore, 1956. 840 pages, \$11.00.

VENOUS RETURN—Gerhard A. Brechier, M.D., Ph.D., Julius F. Stone, Professor Physiology, Department of Physiology, College of Medicine, The Ohio State University, Columbus, Ohio. Grune and Stratton, New York, 1956. 148 pages, \$6.75.

WILLIAMS OBSTETRICS—Eleventh Edition—Nicholson J. Eastman, Professor of Obstetrics, Johns Hopkins University. Appleton-Century-Crofts, Inc., New York, 1956. 1,212 pages, \$14.00.

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Refreshing ruling is result of long-time efforts of American Medical Association's Law Department. For detailed information, see J.A.M.A., July 28, 1956, page 1260.



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A number of firms marketing this drug have voluntarily reduced the dosage they are recommending and have added additional warning statements in their literature to physicians. Firms whose new-drug applications have recently become effective have incorporated many of these changed concepts into their labeling. However, the labeling of many preparations that have been marketed for a longer time fails to reflect these new data.

Papers and exhibits presented at the meeting of the American Medical Association held in Chicago June 11-15, 1956, emphasized the importance of apprising physicians of the latest information on the potential hazards of reserpine. There is an urgent need to bring all reserpine labeling into conformance with the best current available knowledge

and to insure that this information reaches the practicing physicians.

In the treatment of hypertension, or of anxiety states on an outpatient basis, it is the present consensus that the usual recommended maintenance dose should be 0.25 mg. daily. While doses up to 1.0 mg. daily may safely be recommended for the initiation of therapy, they usually should not be continued for longer than a week. No substantial benefit is obtained by larger doses sufficient to compensate for the added hazard. An occasional patient may require up to 0.5 mg. daily as a maintenance dose, but if adequate response is not obtained from this dosage, it is well to consider adding another hypotensive agent to the regimen rather than increasing the dose of reserpine.

Continued use of reserpine in doses of 0.32 mg. daily has been shown to increase gastric secretion and gastric acidity in a significant number of cases whereas daily doses of 0.25 mg. have not been shown to do so. Doses of 0.5 mg. daily for as short a time as two weeks produced this effect in most of the individuals tested and have resulted in massive gastrointestinal hemorrhage or perforation of an ulcer. More important, reserpine in daily doses of 0.5 or 1.0 mg. produces severe depression in a significant number of individuals, and has precipitated a very considerable number of suicidal attempts,

(Continued on Page 107)

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1. Hardin, J. H.; Levy, J. S., and Seager, L.: South. M. J. 47:1190, 1954.

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Labeling of Reserpine Products

(Continued from Page 104)

some of them successful. Many of these depressions have been severe enough to necessitate long-term hospitalization in psychiatric institutions. For these reasons it is believed that reserpine in daily doses above 0.25 mg. is contraindicated and in lower doses should be used with caution in patients with a history of mental depression, peptic ulcer or ulcerative colitis. Furthermore, physicians should be specifically cautioned with respect to the danger of depression, and should be urged to follow their patients carefully with this in mind, and to alert responsible members of the family to the hazards. The same general principles should apply to the labeling of Rauwolfia serpentina.

The optimal dose of reserpine in the treatment of institutionalized psychotic patients is not equally well established. There is no general agreement as to the safety of dosages higher than 5 mg. daily, and it is believed that the usual maintenance dose should be stated as 2.0 mg. daily. Labeling of the higher strength tablets of reserpine intended for neuropsychiatric use should contain prominent warnings that reserpine should be discontinued for approximately one week before instituting shock therapy, since it may result in increased severity of convulsions, respiratory difficulty, and other complications; that a syndrome suggestive of Parkin-

sonism develops frequently in patients on large doses of reserpine but is usually reversible upon lowering the dosage or discontinuing the drug; and that the possible dangers of hypotension and fluid retention should be borne in mind when large doses are used in debilitated patients or those with cardiac disease.

Reserpine tablets of 0.1, 0.25 or 0.5 mg. are suitable for the treatment of hypertension and mild anxiety states. Reserpine tablets of 0.75 mg. potency or higher are suitable only for use in the neuropsychiatric treatment of hospitalized patients under carefully controlled conditions, and the labels should state "For neuropsychiatric use only." In view of the wide variety of dosage forms available it is important that the label declaration of the strength of the tablet should be very prominent, and preferably should be of a different color from the rest of the label in order to obviate any chance of 1.0 mg. tablets, for instance, being dispensed in error as 0.1 mg. tablets.

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C. M. A. ANNUAL SESSION
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April 28 - May 1, 1957

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Riboflavin (B ₂).....	5 mg.
Niacinamide.....	15 mg.
Folic Acid.....	1 mg.
Pyridoxine HCl (B ₆).....	0.5 mg.
Ca Pantothenate.....	5 mg.

Choline Dihydrogen Citrate.....	100 mg.
Inositol.....	50 mg.
Ascorbic Acid (C).....	50 mg.
Vitamin E (as tocopheryl acetates).....	10 I.U.
Rutin.....	25 mg.
Purified Intrinsic Factor Concentrate.....	0.5 mg.
Iron (as FeSO ₄).....	10 mg.
Iodine (as KI).....	0.5 mg.

Calcium (as CaHPO ₄).....	145 mg.
Phosphorus (as CaHPO ₄).....	110 mg.
Boron (as Na ₂ B ₄ O ₇ ·10H ₂ O).....	0.1 mg.
Copper (as CuO).....	1 mg.
Fluorine (as CaF ₂).....	0.1 mg.
Manganese (as MnO ₂).....	1 mg.
Magnesium (as MgO).....	1 mg.
Potassium (as K ₂ SO ₄).....	5 mg.
Zinc (as ZnO).....	0.5 mg.

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5. Antipyretic (capsules) Expectorant (syrup)

Hesperidin and Vitamin C aid in restoring and preserving normal capillary function, important in the control of colds and allergies. Phenylephrine HCl. assists in clearing nasal and bronchial tracts. Multiple anti-histamines alleviate undesirable side effects without reducing antihistamine effectiveness. For analgesic and antipyretic effect, the capsules contains a powerful "APC" group. For its analgesic effect, the syrup contains dihydrocodeinone, more potent than codeine, less constipating, with low addiction liability. Sedative expectorant action in the syrup is achieved with potassium chloride, sodium-free salt.

5-way approach

Each CITRA CAPSULE provides:

(1) Hesperidin purified (Citrus Bioflavonoid)	100.0 mg.
Vitamin C	50.0 mg.
(2) Phenylephrine Hydrochloride	5.0 mg.
(3) Propenpyridamine Maleate	6.25 mg.
Methapyrilene Hydrochloride	8.33 mg.
Pyrilamine Maleate	8.33 mg.
(4 & 5) Salicylamide	200.0 mg.
Acetophenetidin	120.0 mg.
Caffeine Alkaloid	30.0 mg.

Each 5 cc. (teaspoonful) of CITRA SYRUP contains:

(1) Hesperidin Methyl Chalcone (Citrus Bioflavonoid)	8.33 mg. 30.0 mg.
Vitamin C	30.0 mg.
(2) Phenylephrine Hydrochloride	2.5 mg.
(3) Propenpyridamine Maleate	2.5 mg.
Pyrilamine Maleate	3.33 mg.
(4) Dihydrocodeinone Bitartrate	1.66 mg.
(5) Potassium Citrate	150.0 mg.
In a flavored syrup base. Alcohol 2%	
Exempt Narcotic	

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BIBLIOGRAPHY:

Steinberg, Harry; Use of Double Antihistamine in the Treatment of Allergies, *Annals of Allergy*; 13:183, 1955 • Sokoloff, B.; The Capillary Syndrome in Viral Infections, *Treatment with Citrus Flavonoids*, *Am. J. Digestive Diseases*, 22:7, Jan. 1955. • Biskand, Morton S. and William Coda Martin: "The use of Citrus Flavonoids in Respiratory Infections" *Am. J. of Digestive Diseases*, 22, No. 2, 41, February 1955. • Boines, George J.; *Annals of New York Academy of Sciences*, 61:3721, 1955. • Selsman, G. J., and S. Horoschak, 1950. *The treatment of Capillary fragility with Hesperidin and Vitamin C*. *Am. J. Digestive Diseases*, 17:92.



BOYLE & COMPANY Los Angeles 54, California

New Artificial Kidney Has Disposable Parts

A new "tin can and garden hose" artificial kidney has been devised for use among patients with serious kidney failure, three Cleveland physicians recently reported.

Tank and pumps for the kidney cost about \$500 and the inexpensive filtering units are disposable. It works almost as well as the best equipment now available, according to Drs. Willem J. Koliff, Bruno Watschinger, and Victor Vertes. They described it in a recent issue of the *Journal of the American Medical Association*.

The mechanical kidney is used to "wash" the blood of patients suffering kidney failure or uremia, which results in the poisoning of the blood stream by elements usually eliminated in the urine. Dialysis, or "ultra-filtration," of the circulating blood gets rid of these elements and stops the convulsions, nausea, and possibly-fatal results of kidney failure.

The tin-can unit is especially useful since its filter parts can be thrown away after each use, bypassing the usual cleaning, sterilizing, and setting up which take much time.

The filtering unit is made of a 10-ounce fruit can and coils of cellulose tubing separated by fiberglass

screens, all set into a larger can. This is sealed for shipping and can be opened with an ordinary can opener when needed.

Blood from a patient's artery circulates through the tubing, which is coiled around the smaller fruit can. Washing solution enters the bottom of this can through a garden hose connection, bubbles up over the top of the can, and flows down through the screened tubing, carrying with it the unwanted elements in the blood. None of the plasma or other essentials in the blood can wash out through the screening. The filtered blood is continually returned to the body through a vein.

The physicians reported eight cases in which the coil kidney was used. Five of them were suffering such severe kidney disease and heart-circulatory disorders that no lasting improvement could be expected, but immediate results were good. Three other patients recovered completely from acute kidney failure, including one whose life was probably saved by prompt use of the equipment, the doctors said.

The physicians are from the research division of the Cleveland Clinic Foundation and the Frank E. Bunts Educational Institute. The artificial kidney, to be produced by an Illinois laboratory, is not yet commercially available.

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Side Reactions With Various Hypotensive Drugs

postural hypotension

edema

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impotency

bladder obstruction

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California Project on Fitness

The California Project on Fitness is sponsored by the Division of Instruction, California State Department of Education, under the leadership of the Bureau of Health Education, Physical Education, and Recreation. On November 1, 1955, Dr. Jay D. Conner, Chief of the Division of Instruction and Associate Superintendent, appointed the California Committee on Fitness which is composed of representatives suggested by 14 professional and allied associations, and three state agencies.

Donald Fowell, M.D.; Homer A. Graham, M.D.; and Hartzell H. Ray, M.D., represent the California Medical Association on the Project's statewide advisory committee.

The purpose of the project is to improve the fitness of California children, youth, and adults through effective programs of health education, physical education, and recreation under competent leadership. "Fitness" refers to the condition of one who is mentally, physically, emotionally, and socially fit to adapt himself to the demands of everyday living.

Many tasks face the committee as it moves ahead on this action project. Among these are: (1) To determine through systematic study, the effects of health education, physical education, and recreation on children, youth, and adults; (2) to identify the elements that make up the physical aspects of total fitness, and to determine which ones can be tested; (3) to determine what degree of development, as measured by specific tests in health education, physical education, and recreation is most beneficial to the mental, physical, emotional, and social health of individuals; (4) to reexamine the purposes and policies of health education, physical education, and recreation in terms of changes in California living, and to develop effective programs; (5) to develop standards and devices for use by school districts in evaluating present programs in terms of contributions to total fitness; (6) to commission special committees to study problems; (7) to establish minimum standards for health, physical education, and recreation facilities; (8) to interpret fitness needs of children, youth, and adults; and (9) to determine the roles of participating organizations and various governmental agencies in translating committee recommendations into local action.

Reference (6) above, special action committees were selected in May, 1956. These committees and their chairmen are:

Status, Needs, and Philosophy—Mr. Glenn Arnett, San Diego County Schools; Evaluative Criteria for: Curriculum—Sybil Hilton, Bakersfield College; Evaluative Criteria for: Facilities—Holley Ash-

(Continued on Page 18)

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California Project on Fitness

(Continued from Page 10)

craft, Long Beach City Schools; Evaluative Criteria for: Personnel—Dr. Harold Schoenfeld, Decoto Elementary School District; Evaluative Criteria for: Programs of Measurement—Dr. Anna Espenschade, University of California, Berkeley; Special Administrative Problems—Erle Johnson, Sacramento County Schools; Fundamental Research Needs and Priorities—Dr. Laurence Morehouse, University of California at Los Angeles; Professional and Public Relations—Dr. Ed Staley, Executive Secretary, California Association for Health, Physical Education and Recreation.

Committee chairmen will submit reports in April, 1957.

The California Committee on Fitness will work closely with professional and lay organizations, local school districts and colleges and universities in carrying out its tasks. Various research resources will be requested to assist on specific projects.

Participating Agencies: California Association of School Psychologists and psychometrists, California Association for Health, Physical Education and Recreation, California Association of School Administrators, California Association of Secondary School Administrators, California Congress of Par-

ents and Teachers, California Elementary School Administrators, California Interscholastic Federation, California Junior College Association, California Medical Association, California Recreation Commission, California Recreation Society, California School Boards Association, California School Health Association, California State Department of Education, California State Department of Public Health, California School Supervisors Association, California Teachers Association.

Medical Students Study Patient as a Whole

Physicians today are giving more and more attention to treating patients as a whole; not the disease alone. The nation's 76 approved four-year medical schools are recognizing this fact, too.

A recent report by the American Medical Association says that greater emphasis is being placed on such factors as the patient's emotional tone, conditions of employment, habits of living and other features of daily life "which often determine proper diagnosis, treatment and prevention."

Knowledge of the patient, it is felt, may lead to more accurate diagnosis of the disease. Not only the diagnosis but also the treatment of the patient can be determined by knowledge of his constitutional make-up.

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*"On all but 2 cases the doses used (25 to 200 mg.) permitted satisfactory control of such . . . problems as agitation, anxiety, nausea, vomiting, pain and hiccoughs."*¹

Note: Before administering SPARINE, it is important for the physician to review the information in the package circular, especially those parts of it dealing with administration, dosage, and possible side-effects.

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Clinical Report on . . .

PROMAZINE IN THE MANAGEMENT OF MEDICAL DISTURBANCES¹

Case No.	Age	Diagnosis	Therapeutic Indication	Dose and Route	Duration of Therapy in Days	Response
1	56	Tetanus	Control convulsions and for relaxation	100 mg., q4h, I.V.	2	Good muscle relaxation Opisthotonos—no convulsions
2	36	Duodenal ulcer, D.T.'s	Control D.T.'s and nausea	50 mg., q6h, p.o.	6	No trouble with nausea
3	60	Peptic ulcer and hiatal hernia	For sedation	50 mg., q6h, p.o.	13	Good response—no pains
4	45	Pancreatitis—Gastritis	Hyperactivity	50 mg., q6h, p.o. 50 mg., q4h, I.M.	7 7	Good response—pain diminished

7	40	Intracranial hemorrhage and M.S.	Pain in muscles	50 mg., q.i.d., p.o.	35	Good control of muscle pain
8	30	Ulcerative colitis	Pain from muscle and vomiting	100 mg., q6h, I.M.	36	Fair response
9	39	Sickle cell crisis Narcotic addict	Control pain	100 mg., q4h, p.o.	3	Good response
10	48	Rt. lower lobe pneumonia Chronic alcoholism	Control activity	100 mg., q6h, p.o.	12	Good response
11	44	Pneumonia	Vomiting and D.T.'s	50 mg., q6h, I.M.	6	Good response, immediate
			Abdominal pain		10	Good pain control

22	13	Uremia	Vomiting	25 mg., q6h	4	Vomiting controlled
23	57	Alcoholic (post)	D.T.'s and pain in chest	50 mg., q.i.d., I.M.	25	Controlled D.T.'s, pain relieved
24	42	Alcoholic (post)	Confused and disoriented	50 mg., q6h, p.o.	27	Fair control
25	71	HCV—cerebral arteriosclerosis	Behavior problem	50 mg., t.i.d., p.o.	9	Good
26	47	Rheumatoid arthritis Acute excitation	Pain	50 mg., q6h, p.o. 50 mg., q6h, p.o.	3 5	Fair response
27	16	Stricture of esophagus Pregnancy—hypertension	Vomiting	50 mg., q6h, I.M. 25 mg., q6h, I.M.	2 3	Controlled vomiting
		Chronic glomerulonephritis	Control nausea and vomiting	50 mg., q6h, p.o.	9	Fair response

Pregnancy Does Not Adversely Affect Tuberculosis

Pulmonary tuberculosis is not complicated by pregnancy and should not be considered a reason for ending the pregnancy, two Philadelphia physicians said recently.

Drs. Loren M. Rosenbach and Columbus R. Gan-gemi said in a recent issue of the *Journal of the American Medical Association* that if the disease gets worse during or immediately after pregnancy, it is not due to pregnancy but simply to "the tendency of tuberculosis itself to progress."

The relationship of tuberculosis and pregnancy has long been controversial, they said. For more than 70 years termination of the pregnancy was recommended. However, for the last 30 years the idea that pregnancy does not affect the disease favorably or unfavorably has been gaining support.

They studied the records of 152 tuberculous women who had 241 pregnancies over a 30-year period and found no change in the condition of 90.5 per cent of the women during or after pregnancy. Of the 241 pregnancies 23 cases became worse and 19 improved during the pregnancy or in

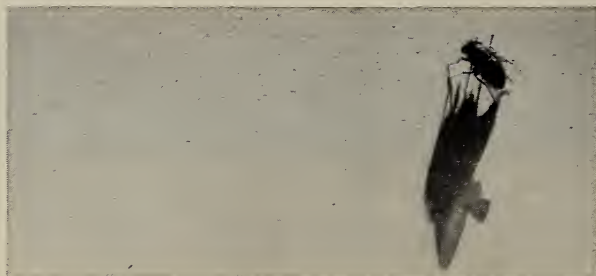
the year following. Unfavorable changes occurred most frequently in moderately or far advanced cases and especially among patients who failed to follow medical advice. None of the patients who had inactive cases of tuberculosis showed any change in their state. All fluctuations—improvement or relapse—occurred in active cases of tuberculosis.

There were 19 cases of therapeutic abortion—the termination of the pregnancy for the good of the mother's health—during the 30-year period. Four patients who refused to follow medical advice became worse during the subsequent year, as did three of 11 women who did not undergo the recommended therapeutic abortions. These three also refused to follow medical advice. The authors commented, "Although the numbers were small, these figures indicate no medical benefit from therapeutic abortion."

The women, patients at the Henry Phipps Institute of the University of Pennsylvania, all lived in a highly overcrowded slum area which has the highest rate of tuberculosis in Philadelphia.

Among 101 early cases of tuberculosis, four pa-

(Continued on Page 26)



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Five Medical Schools Have Enrollment Exceeding 600

The University of Tennessee at Memphis is the largest of the 76 approved four-year medical schools in the country on the basis of total enrollment.

A recent report by the American Medical Association shows that, during the 1955-56 academic year, five medical schools had a total enrollment of more than 600 each.

The largest was the University of Tennessee with 781 students. The University of Michigan followed with 762; Jefferson at Philadelphia with 677; University of Illinois with 636, and the University of Texas at Galveston with 614.

C. M. A. ANNUAL SESSION
Los Angeles
April 28 - May 1, 1957

Pregnancy Does Not Adversely Affect Tuberculosis

(Continued from Page 22)

tients became worse and five improved during or after their pregnancies. Of 109 moderately advanced cases, 11 showed progression of the disease and ten showed improvement. All ten patients who improved followed medical advice, while nine of the 11 patients with progressive worsening did not. Among 31 advanced cases, eight became worse and four improved. All but one of the patients with progressive cases refused medical advice, while those improving were under proper medical care, the authors said.

They concluded that with adequate and proper present-day care of tuberculosis, "pregnancy should not be considered a complication nor should it be looked upon with concern as a cause of progression of the disease."



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Women Found "Tolerant" Of Disease Symptoms

A specialized survey of elderly women patients has shown that they are unusually tolerant of troubling symptoms caused by diseases of the reproductive organs.

Three New York physicians said recently that only 69 of 680 women surveyed complained of any symptoms, although examination revealed 6,035 separate possible causes of distress among them. Some of the disorders found were serious, including six cases of cancer.

The survey, undertaken among women admitted to municipal institutions for the aged, was reported in a recent issue of the *Journal of the American Medical Association* by Drs. Clair E. Folsome, E. Edward Napp, and Alfred Tanz.

A major survey finding was that good nursing care and proper personal hygiene could prevent a large number of the conditions found, especially infections.

The women, ranging from 38 to 111 years old, were examined only for the condition of the reproductive tract. Despite the youth of some of the women, all were classified as "elderly" since all showed physical evidence of aging.

Two surprising facts were disclosed, the physicians said. First, there was no direct relationship between condition of the reproductive organs and the number of children borne; second, women as old as 80 and over still showed evidence of sex hormone activity. The physicians called the second finding "inexplicable" and "incredible." They said the "tissue age" of four patients over 81 was similar to that of women in their fifties. Hormone activity also was found among 10 patients between 55 and 80.

The study was made in a search for better understanding of the special medical needs of older women, the physicians said. This is becoming an important problem since female life expectancy has increased from 48.7 years in 1900 to 72.4 years in 1950, while there has been no change at all in the average age of menopause—or transition from youth to the aging stage.

Of the 680 women studied, 479 were married or widowed. Only three had separated from their husbands. Three hundred twenty-four women had borne children, including 10 who had 10 or more children. One patient, aged 83, had borne 17 children in 21 pregnancies and had outlived all of them.

The women were classified in two groups: Those who showed fibrous changes—resulting in enlarged organs—and those with atrophied or diminished organs. In both groups there were women who had borne children and those who had not, with no correlation between them. An unusual finding—which the researchers could not explain—was that women with the first type of aging of the organs showed a much smaller proportion of malignancy or cancer.

(Continued on Page 46)



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New Vaccine Reduces Rate Of Grippe-Like Illnesses

A new vaccine, developed to combat certain respiratory diseases, was found in a recent preliminary study to reduce the expected rate of illness by more than half, four researchers said recently.

The vaccine, developed at the National Institute of Allergy and Infectious Diseases, Bethesda, Md., was made of types 3, 4, and 7 adenoviruses, which cause acute feverish respiratory diseases. These diseases resemble grippé and are not of the "common cold" variety.

The vaccine was given to approximately 4,000 recruits at the U. S. Naval Training Center, Great Lakes, Ill., between January and April, 1956. These men plus 12,000 others who did not receive the vaccine were observed for the occurrence of the diseases. From 50 to 70 per cent of the expected number of illnesses were prevented by the vaccine, the researchers said in a recent issue of the *Journal of the American Medical Association*.

Most of the illnesses that occurred in the group not receiving vaccine were caused by type 4 adenovirus. Types 3 and 7 were not prevalent during the period of the study. These three types of adenovirus, formerly designated as APC viruses, occur most frequently in military persons.

Each recruit was given one shot of the vaccine.

None developed side reactions and all developed antibodies against the three types of virus.

The authors pointed out that the vaccine used in the study was the first prepared on a commercial scale and perhaps more potent products will be developed later. They observed that the use of the vaccine may reduce "the usual interference with military training routine" resulting from acute feverish respiratory illnesses. It is also possible, they said, that vaccination of part of the recruits might produce "herd immunity" sufficient to completely prevent outbreaks of respiratory illnesses among recruits.

The authors are Dr. Joseph A. Bell, Bethesda; Capt. Matthew J. Hantover (MC), U. S. Navy; Dr. Robert J. Heubner, Bethesda, and Dr. Clayton G. Loosli, Chicago. Drs. Bell and Heubner are Public Health Service researchers; Captain Hantover is in charge of research at the Great Lakes Naval Training Center, and Dr. Loosli is from the department of preventive medicine at the University of Chicago. The research was conducted jointly by the U. S. Public Health Service and the Department of the Navy.

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CLINICAL RESEARCH

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"In the interest of medicine since 1870"

Women Found "Tolerant" Of Disease Symptoms

(Continued from Page 32)

The physicians made several conclusions from the study:

The probability of malignancy in the ovaries decreases after the age of 50.

Simple physical inspection is "most important" in evaluating the health of the external reproductive organs in women.

Women have a surprising tolerance of various symptoms, and examination can reveal a number of disorders not indicated by the women's com-

plaints. (Most important, they said, was the discovery of four cases of previously unknown cancer among women surveyed.)

There is primarily a need for elderly women to have good nursing care and careful personal hygiene, and such women need "supportive" care including vitamins, supplementary hormones, dietary care and specific drug treatment before operations.

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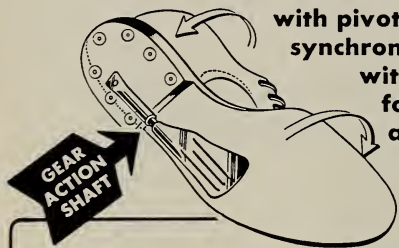
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(Continued from Page 50)

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Any proposed legislation should require informative labeling on household chemical items, including listing of possibly harmful ingredients, their potentialities for harm, their directions for safe use, and first aid instructions for poisoning emergencies.

—A.M.A. Secretary's Letter

Prenatal "Stress" May Cause Leukemia

A possible clue to the cause of leukemia, a serious blood disease in which there is an excess of white cells, was offered recently by two North Carolina physicians.

The trouble may result from some prenatal injury to the blood-forming organs, Drs. Doris H. and Jerome S. Harris, Durham, N. C., said. They based their speculation on a study of Mongoloid children who also developed leukemia. The incidence of leukemia is much higher among Mongoloids than among the general population, they said.

The actual cause of Mongolism—an extreme form

(Continued on Page 62)

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Dr. Murray Speaks at A.A.G.P. Dedication

A.M.A. President Dwight H. Murray was one of seven speakers at the dedication of the new \$650,000 national headquarters building of the American Academy of General Practice at Kansas City recently.

Dr. Murray, who was paid eloquent tribute in his introduction by Academy President John S. DeTar, of Milan, Mich., outlined the tremendous progress that medicine is making in the building of modern facilities in every state and community of the nation.

"If the cost of all new medical and health facilities—hospitals, medical schools, medical society buildings, doctors' offices and other structures—during 1955 is added up, we would probably get a figure near one and a half billion dollars," Dr. Murray said.

A reception and banquet in the evening was attended by more than 400 persons, including leaders from many state chapters of the Academy. President-elect Malcolm E. Phelps, El Reno, Okla., who served as toastmaster, introduced officers and distinguished guests.

Dr. Murray again addressed this group as did H. Roe Bartle, who was hailed as "The Colossal Mayor of Kansas City" in a special article in the *Saturday Evening Post* last January 28. At both the afternoon and evening ceremony, Mayor Bartle praised the family doctor for his unselfish service to humanity. Tribute also was paid to Dr. James R. McVay, a member of the A.M.A. Board of Trustees, for his long and distinguished service to medicine and the profession in the Kansas City area.

Within an hour after Dr. Murray's arrival in Kansas City, he was invited to a press conference in the Academy building. He discussed the Harrison narcotics law and how effective it has been since its enactment in 1914.

"Almost 42 years of experience show that the law's prohibitory method has failed," Dr. Murray said, adding that the battle against addiction rests at the doorstep of medicine, embracing also the fields of psychology and sociology.

Dr. Murray told reporters that the medical and social fight to cure and rehabilitate users of narcotic drugs is a major problem today, and that the A.M.A. House of Delegates has been acting on various phases of the problem since 1906, which was eight years before Congress passed the Harrison law.

Dr. Murray's remarks were given wide play in newspapers, including a 15-inch story on the front page of the *Kansas City Times*. Dr. Murray was unaware that while he was meeting with the Kansas City press the Congress of Correction, which is made up of 800 of the nation's leading prison authorities, was concluding its annual five-day meeting in Los Angeles. The Congress' final action was adoption of a resolution which termed "narcotics a medical problem," and opposed "harmful and harsh punitive measures" against the addict.

—A.M.A. Secretary's Letter

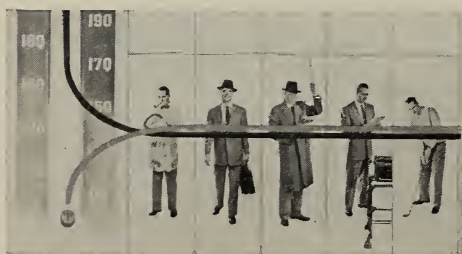
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3. *Smooth, predictable response:* In a given patient, the same dose of 'INVER-SINE' elicits the same blood pressure response, time after time, with *minimal day-to-day fluctuation*.

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In all these respects, 'INVER-SINE' differs greatly from all other available ganglionic blocking agents and is, in effect, in a unique category among anti-hypertensives.

CLINICAL STUDIES

'INVER-SINE' has been used by many investigators on thousands of patients. In all this clinical work, this new and very potent agent has amply fulfilled its laboratory promise. By demonstrating reproducibility, high potency and smooth effectiveness with minimal fluctuation — all resulting directly from its complete absorption from the gastrointestinal tract — 'INVER-SINE' has successfully circumvented many of the objections to the use of ganglionic blockade in hypertension.

In the opinion of one reviewer "... the most useful ganglionic blocking agent to be introduced is mecamlamine ('INVER-SINE'). . . . This drug is completely absorbed when given by mouth and has such a gradual onset and offset of action that a continuous and effective level of blockade can readily be achieved. . . ."¹

Further, in one of many clinical trials,[†] "The over-all response rate was 92%, and 24% of the patients became normotensive."² Investigators have found 'INVER-SINE' to be "... the most potent and effective of the three drugs in reducing the blood pressure. . . ." ['INVER-SINE' and two other ganglionic blocking agents.]²

Moreover, following ganglionic blockade with 'INVER-SINE,' some patients with hypertension may experience re-

lief of pre-existing headache and angina pectoris. Many patients with retinopathy, congestive heart failure and electrocardiographic abnormalities, have shown signs of improvement during treatment with 'INVER-SINE.'

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'INVER-SINE' (mecamlamine), though comparatively nontoxic, is a very potent agent which must be used with care. Side effects observed during clinical use are due to excessive pharmacologic action. They may be minimized by careful adjustment of dosage and close supervision of the patient.

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Judged by any standard 'INVER-SINE' (mecamlamine) is the most satisfactory agent in the treatment of hypertension by ganglionic blockade. It is the most potent and most reliable oral agent for the management of hypertension.

References:

1. Sturgis, C. C., et al.: *Advances in Internal Medicine*, J. Michigan M. Soc. 55:154 (Feb.) 1956.

2. Moyer, J. H. et al.: *Drug Therapy of Hypertension: Preliminary Observations on the Clinical Use of Mecamlamine (A Ganglionic Blocking Agent) in Combination with Rauwolfia for the Treatment of Hypertension*, Med. Rec. & Ann. 49:390 (Sept.) 1955.

† In this clinical trial all patients were given, in addition to one of the ganglionic blocking agents, a constant daily amount of reserpine.

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Prenatal "Stress" May Cause Leukemia

(Continued from Page 54)

of mental deficiency marked by such physical characteristics as a flattened skull and slanted eyeslits—is unknown. It is generally believed to result from a physical, chemical, or infectious stress placed on the developing fetus between the sixth and ninth weeks of life.

Mongolism affects almost every part of the body which is undergoing rapid development at that time. It is possible that the later development of leukemia in these children results from injuries to the developing bone marrow and blood cell system, they said. This leads to the speculation that leukemia in nor-

mal children may also have its origin in early fetal life.

These prenatal influences may either be the cause of leukemia in themselves or result in an increased susceptibility to other possible causative agents, such as virus or x-rays.

The authors saw four cases of leukemia among 255 Mongoloid children over a 25-year period. In addition, nine other cases have been reported. They made their report in a recent issue of *Journal of Diseases of Children*, published by the American Medical Association, with the hope that it may help in the "general ultimate understanding of leukemia."

Plan to attend the Third Annual California Rural Health Council, January 25 and 26, Hotel Senator, Sacramento. *Contact:* GLENN GILLETTE, Associate Director, Public Relations, California Medical Association, 450 Sutter Street, San Francisco 8.

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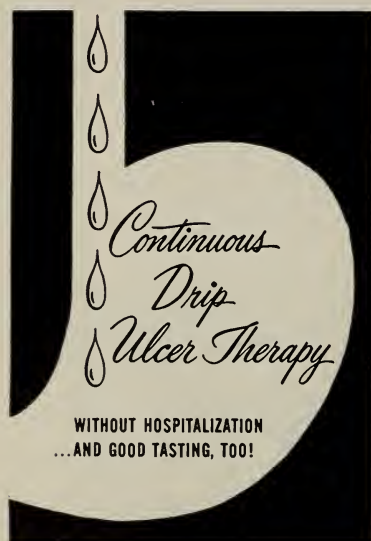
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*Steigmann, F., and Goldberg, E.: Ambulatory Continuous Drip Method in the Treatment of Peptic Ulcer, *Am. J. Digest. Dis.* 22:67 (Mar.) 1955.

†Mg trisilicate 3.5 gr.; Ca carbonate 2.0 gr.; Mg oxide 2.0 gr.; Mg carbonate 0.5 gr.

California M E D I C I N E

OFFICIAL JOURNAL OF THE CALIFORNIA MEDICAL ASSOCIATION

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Number 5

Treatment of Diabetic Patients

Observations on the Use of Carbutamide and Tolbutamide

STANFORD SPLITTER, M.D., FREDERICK R. BROWN, JR., M.D.,
ROGER W. FRISKEY, M.D., LOIS GRINDLE, R.N., and
LAURANCE W. KINSELL, M.D., Oakland

RECENT REPORTS have indicated that certain butyl sulfonylurea compounds, specifically carbutamide (BZ-55) and tolbutamide (Orinase®), differing chemically from each other only in the substitution of a methyl group on the benzene ring in the latter compound as compared to an amino group in the former, produce favorable modification in the diabetic state in a high percentage of middleaged patients with diabetes.¹⁻¹¹ The present report represents observations in 32 such patients who have been observed in the outpatient department of the Highland Alameda County Hospital.

Many of these patients were in the "noncooperative" category; that is, they did not adhere to any dietary program. All of them had significant hyperglycemia. Many were receiving appreciable amounts of insulin.

Prior to administration of sulfonamide, insulin was discontinued gradually or abruptly. Ketonuria developed with discontinuance of insulin in only one of the patients studied. In the majority, hyperglycemia varied in surprisingly slight degree from that noted during the period of insulin administration.

From the Department of Medicine, and the Institute for Metabolic Research, Highland Alameda County Hospital, Oakland.

Submitted August 20, 1956.

- Of a group of 32 patients with diabetes, 26 had a favorable modification of the disease in response to administration of butyl-sulfonylurea. All but one of the patients who had good response were past the age of 38. All diabetic patients included in this group were those with little or no tendency to ketosis after cessation of insulin administration. No toxic manifestations were noted except for a slight decrease in leukocytes in one case.

After a period of two weeks or less following discontinuance of insulin, sulfonamide administration was begun in a dosage ranging from 0.5 to 4.0 gm. daily. Subsequent dosage was increased or decreased as indicated by the blood sugar response. The usual maintenance dose was 1 gm. daily.

In addition to measurement of sugar in the blood and in the urine, the patients were also studied with regard to 24-hour iodine¹³¹ uptake, and leukocyte and differential blood counts.

The results of the study (extending over the period March to July, 1956) are shown in Table 1 and Chart 1. Of this group of 32 patients, 26 or 81 per cent showed a significant response to sulfonamide therapy. Of the 26, 13 showed significant, but slight, response—i.e., a drop in the fasting blood sugar of less than 50 mg. per 100 cc.; nine manifested a moderate response, with a decrease in fast-

TABLE 1.—Clinical and Laboratory Data in 32 Diabetic Patients Receiving Carbutamide or Tolbutamide

Patient: Age, Race, Sex	Years Diabetic	Severity	Stability	Obesity	Previous Dose Insulin (units)	Blood Sugars		Blood Sugars (Fasting)		Sulfonamide Therapy		Duration of Therapy (Weeks)	Toxi- city	Associated Diseases and Other Medications
						on Insulin	(Milligrams per 100 cc.)	Without Insulin	(mg. per 100 cc.)	Initial Dose (gm.)	Mainte- nance Dose (gm.)			
69 WF	16	Mild	+	Mild	30 NPH	100 to 200	157 to 218	86 to 96	1.0	.5	...	3	...	Arteriosclerosis obliterans, on thyroid, 100 mg. daily
72 WF	2	Mild	+	...	...	...	175	80 to 100	.5	.5	7 to 13	11	...	Hypertensive heart disease, on Rauwolfia
56 NM	8	Mild	±	Mild	20 NPH	200 to 350	150 to 250	150 to 350	2.0	3.0	7 to 15	11	...	
72 WF	16	Mild	+	...	15 PZI	140 to 220	150 to 240	105 to 130	.5	1.0	11 to 13	9	...	
49 WF	7	Mild	+	Mild	20 NPH	90 to 210	170 to 220	120 to 150	1.0	1.0	7 to 9	9	...	Recent partial loss of vision, prior to therapy
71 WF	8	Mild	+	...	30 NPH	120 to 270	170	80 to 125	2.0	.5	4 to 12	14	...	Arteriosclerotic heart disease; carcinoma of cervix
54 WM	1 1/3	Mild	+	...	20 NPH	130 to 200	110 to 200	95 to 120	1.0	1.0	4 to 7	10	...	Cirrhosis
38 NF	1/4	Mild	+	Marked	...	...	140 to 235	80 to 95	2.0	1.0	6 to 10	14	granulo- penia	Late latent syphilis
53 NF	8	Mild	+	Moderate	40 PZI	145 to 350	175 to 375	90 to 170	2.0	1.0	5 to 14	16	...	
63 WF	11	Mild	+	...	15 PZI	100 to 170	105 to 165	75 to 90	1.0	.5	6 to 12	16	...	Cerebrovascular disease
55 WF	4	Mild	+	...	20 NPH*	125	250 to 300	100 to 135	2.0	.5	8 to 13	12	...	Pyelonephritis, 1952; albuminuria, now present
77 WM	7	Moderate	+	Mild	40 NPH	160 to 210	160 to 260	95 to 165	1.0	1.0	7 to 12	18	...	Enlarged liver; alcoholic history
56 WF	7	Moderate to Severe	—	Mild	40 NPH	290 to 440	300 to 325	190 to 225	4.0	1.0	6 to 16	1 1/2	...	Arteriosclerotic heart disease, old infarct.; chronic cholecystitis; cont. glycosuria + ketonuria on carbutamide therapy
48 NF	1/2	Moderate	+	Mild	10 NPH	150 to 300	150 to 225	85 to 130	1.5	.5	5 to 11	16	...	
51 NF	7	Mild	+	Moderate	15 NPH	140 to 200	...	70 to 90	2.0	.5	8 to 13	21	...	Arrested pulmonary tuberculosis; no treatment since January, 1956
46 NF	1/2	Mild	+	...	...	...	115 to 160	70 to 95	2.0	.5	2 to 12 (4 to 6)	7	...	
55 WF	3	Mild	+	Mild	...	...	220 to 240	80 to 100	1.5	.5	6 to 12	16	...	

*1952 only.

TABLE 1 (Continued)

Patient: Age, Race, Sex	Years Diabetic	Severity	Stability	Obesity	Previous Dose Insulin (units)	Blood Sugars (Fasting) on Insulin (Milligrams per 100 cc.)	Blood Sugars (Fasting) Without Insulin (Fasting)	Sulfonamide Therapy				Associated Diseases and Other Medications		
								Blood Sugar (Fasting)	Initial Dose (gm.)	Main- tenance Dose (gm.)	Duration of Therapy (Weeks)			
68 WF	13	Mild	+	Moderate	30 NPH	155 to 180	180	190 to 225	1.0	1.0	...	4	...	General arteriosclerosis; old cerebrovascular accident
62 WF	13	Mild	+	Moderate	10 NPH	180 to 220	...	85 to 110	1.5	.5	7 to 13	16	...	
54 WF	16	Mild	+	Moderate	30 NPH	190 to 390	120 to 190	100 to 110	.5	.5	4 to 7	9	...		Cirrhosis; peripheral neuritis
65 WF	19	Mild	+	Marked	10 NPH	180 to 240	180 to 205	75 to 105	2.0	.5	5 to 13	13	...	Arteriosclerotic heart disease
55 NF	9	Moderate	±	Mild	30 Req. 30 NPH	230 to 325	160 to 260	115 to 175	2.0	.5	6 to 12	16	...	Arteriosclerotic heart disease; cerebral arteriosclerosis; pyelonephritis; cholelithiasis
19 WF	½	Moderate	±	Moderate	20 NPH	250 to 325	160 to 350	140 to 175	2.0	1.0	11 to 17	16	...	Hypertensive arteriosclerotic heart disease; arteriosclerosis obliterans of legs; late latent syphilis
57 NF	7	Mild	+	Mild	15 NPH	160 to 220	120 to 160	74	.5	.5	9	3	...	
68 WM	6	Mild	+	...	10 NPH	125 to 170	121	85 to 170	1.0	1.0	9	3	...		Hypertensive heart disease, old infarct.; arteriosclerosis obliterans both legs
48 NF	3	Mild	+	Marked	15 NPH	180 to 320	110 to 250	110 to 190	3.0	1.0	8 to 15	13	...	
60 NF	5	Mild	+	Marked	...	...	200 to 250	115 to 125	1.0	1.0	11	4	...	Tolbutamide
41 NF	...	Moderate	±	Moderate	...	...	440	100 to 125	1.0	.5	...	8	...	
73 WM	3	Moderate	+	...	50 NPH	120 to 170	145 to 180	105 to 135	1.0	1.0	...	4	...	Deafness; early cerebral arteriosclerosis; tolbutamide
64 WF	7	Moderate	+	Mild	40 NPH	255 to 325	315	245 to 340	2.0	3.0	...	4	...	Cataracts removed 1 year ago; tolbutamide
54 WF	13	Moderate	±	...	40 NPH	200 to 300	230 to 305	125 to 262	1.5	1.0	...	11	...	Arteriosclerotic heart disease with congestive failure; cerebrovascular arteriosclerosis; tolbutamide
68 WM	10	Moderate	±	Mild	20 NPH	170 to 205	170	115 to 130	3.0	1.0	...	5	...	Hypertensive arteriosclerotic heart disease with congestive failure; tolbutamide

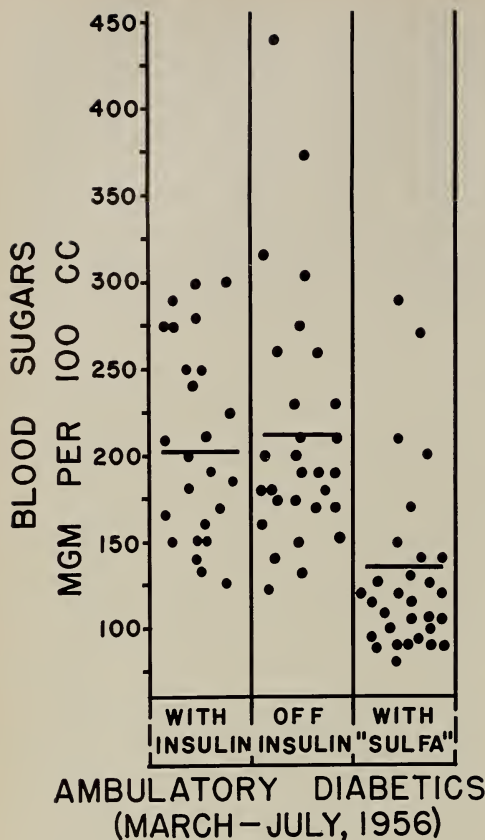


Chart 1

ing blood sugar of from 50 to 100 mg. per 100 cc.; and four had a decrease in fasting blood sugar of more than 100 mg. per 100 cc.

There appeared to be no direct correlation between presence or absence of obesity and degree of response. All the responsive patients, with the exception of a 19-year-old obese girl (with diabetes of recent origin) were over the age of 38, the eldest being 77. Only four of the six male diabetic patients had a significant response. No obvious correlation existed between the duration of the diabetes or the amount or duration of insulin treatment.

The effective blood levels of sulfonamide ranged from 4 to 14 mg. per 100 cc.

Significant decrease in iodine¹³¹ uptake has not been observed in patients in this group, thus far.

Inhibition of iodine uptake, however, has been observed under other circumstances.⁵ Some apparent decrease in leukocytes was noted in one patient after six weeks of medication with carbutamide. No subjective toxicity appeared. The patient had had moderate leukopenia before sulfonamide therapy was instituted.

Several patients appeared to have increased well being, diminished hunger, and, in some instances, weight loss, while not taking insulin and/or on sulfonamide. This statement must be interpreted cautiously, inasmuch as these patients were receiving a large amount of medical attention, which may have had some psychotherapeutic value.

2701 Fourteenth Avenue, Oakland 6.

ACKNOWLEDGMENT

Grateful acknowledgment is made to Dr. C. J. O'Donovan of the Upjohn Company for supplies of tolbutamide (Orinase); and to Dr. W. R. Kirtley of Eli Lilly and Company for supplies of carbutamide (BZ-55) used in these studies.

This work has been supported in part by grants from the Upjohn Company and from Eli Lilly and Company.

Technical assistance in this study was given by Evelyn Jones and Yvonne McBride.

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Postmaturity Syndrome

The Obstetrician's Role in Management

ALLAN CAMPBELL BARNES, M.D., Cleveland

THE RECENT EMPHASIS upon the postmaturity syndrome in the newborn is valuable to the extent that it has redirected attention and interest toward one of the great sources of fetal wastage. During 1955 this neonatal clinical entity was present in 2.2 per cent of the total deliveries on the obstetrical service of Western Reserve University School of Medicine, and in 10 per cent of these 2.2 per cent in which the diagnosis was made, the baby was a stillborn. Data cited by Gibson (Table 1) are even more significant and indicate that there is as great a hazard to being born three weeks late as to being born three weeks early.

The expression *postmaturity syndrome*, however, is unfortunate to the extent that it confuses the issue with the obstetric problem of "post datism." Actually, in the so-called postmaturity syndrome the problem is one of relative placental insufficiency, and this syndrome, together with its fetal wastage, may occur prior to the date of expected confinement or at the time of the date of expected confinement as well as in the patient who has gone beyond the calculated date. While in the majority of cases this entity appears at or past term, when the growing fetus outstrips the functional ability of the aging placenta, nevertheless it sometimes appears prior to term, and some maternal complications (notably chronic nephritis) have long been characteristically associated with it. The problem is one of the adequacy of the placenta to meet the demands of the fetus for food and oxygen, and when it is inadequate, fetal distress and ultimate fetal loss will ensue.

The resultant syndrome as seen in neonatal infants is familiar to all physicians. There is an absence of vernix on the baby and also direct evidence of placental insufficiency—that is, the weight loss that has taken place and the indications of the passage of meconium.

Stewart Clifford has divided the syndrome into stages. In the first stage the baby has an unstained skin but with loss of vernix, and there is evidence of malnutrition in the loss of subcutaneous fat and the wrinkling of the skin. In the second stage there is the loss of vernix and the evidence of malnutri-

- The obstetric problem of going past the date of expected confinement has no medical significance, provided the fetus in its demands does not outgrow placental capability. The problem of relative placental insufficiency, however, is a serious one with a total fetal wastage in the neighborhood of 15 per cent.

Antepartum indications of such placental insufficiency have not yet been well documented. However, a decrease in the fundal measurements and particularly where associated with an otherwise unexplained loss of maternal weight has proved an ominous sign.

In a study of application of reported criteria for determining when a patient is "at term" by vaginal cytologic methods, the results were approximately 75 per cent accurate. Cytologic studies when coupled with other physical findings may be of assistance in determining in which cases labor should be induced and in which the fetuses should be accorded the special attention that is demanded by the chronic state of low grade anoxia.

tion, together with green meconium staining of the amniotic fluid and of the baby's skin, cord and the membranes. In the third stage the evidence of malnutrition may be more severe and the skin is stained yellow, as are the fingernails and the cord. The loss of the protective influence of the vernix leads to the typical alligator skin—dry and scaling, with superficial cracking and desquamation of the palms and the soles of the feet. Clifford's data indicate a 25 per cent mortality for Stages II and III combined, with an additional 54 per cent of serious morbidity.

The diagnosis of this hazardous situation for the fetus, which is made at or after delivery, however, is a diagnosis that is of no significant help. Diagnosis of placental inadequacy by the appearance of the victim of this inadequacy can be compared to a coroner's verdict that murder has been committed based on the appearance of the corpse; it may be a perfectly accurate verdict, but it does not save the victim's life.

The problem is to devise some method—clinical observation or a laboratory test—that will give a reflection of the adequacy of the placental function. At present it would appear that there are three general avenues by which obstetricians could determine the validity of placental function.

Guest Speaker's Address: Presented before the Section on Obstetrics and Gynecology at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

From the Department of Obstetrics and Gynecology, Western Reserve University School of Medicine, Cleveland 6, Ohio.

TABLE 1.—Fetal Loss in Relation to Whether Delivery Was Before, On or After the Estimated Day (Data by Gibson)

	Days Before Estimated Date of Confinement				On Estimated Date of Confinement	Days After Estimated Date of Confinement				Total
	22 Plus	21-15	14-8	7-1		1-7	8-14	15-21	22	
Total cases.....	446	248	563	1,076	195	1,252	757	263	87	4,887
Fetal loss.....	119	14	18	33	5	26	15	12	6	248
Per cent lost.....	26.7	5.6	3.2	3.1	2.6	2.1	1.9	4.8	6.9	5.1

In the first place there are the measurements of the clinical end results of placental inadequacy. The extreme example of this, of course, is the syndrome itself in the newborn. In the same class, however, could be cited decreasing fundal size measured from the symphysis to the fundus. In more than half the cases observed by the author, this warning sign was present. It must be remembered that in this situation not only is the baby losing weight, but there is a diminution in the amount of amniotic fluid, which will also contribute to a decrease in fundal measurement. In about 25 per cent of the cases observed by the author there was also the clinical sign of a maternal weight loss. This finding will often appear unassociated with subsequent evidence of placental insufficiency, and its prognostic value is hence more questionable. Combined, however, with diminution in fundal size or estimated fetal weight, it represents a grave warning.

In the second place there should be available techniques for measuring the chemical byproducts of placental senility. None, however, is available at the moment, and *in vitro* studies of the placenta would indicate that there is little biochemical change in the last 10 to 12 weeks of normal pregnancy.

Finally, there should be the potential of measuring the concomitant changes which are associated with placental insufficiency, although not necessarily resulting from it. It would be presumptuous in the light of present knowledge to speak of such associated changes as being a reflection of the causes of placental inadequacy. On the other hand, it should be possible to recognize some concomitant change in the patient which stems from the same unknown etiologic process as does the placental insufficiency.

One such possible finding could be reflected in the cytologic changes of the vaginal epithelium in the patient whose placenta is "at term."

In 1954, at the International Congress of Gynecology and Obstetrics, Lemberg-Siegfried and Stamm reported cytologic changes in the vaginal material which, they believed, had a more than 90 per cent correlation with the date of expected confinement. A possibility to be considered is that these changes stem from hormonal alterations which are concomitant with placental functional degeneration.

In 1893, Lataste reported his original observation that the vaginal epithelium underwent rhythmic changes in mammals. In 1917 Stockard and Papa-

nicolaou, interested in studying sex determination in guinea pigs, revived and put to use the study of vaginal cytologic changes to follow the changes in their laboratory animals, and the technique soon outgrew the individual experiment.

In 1925 Papanicolaou reported optimistic but inconclusive studies attempting to diagnose early pregnancy by vaginal smear technique. These observations were extended in 1946 but at no point have there been consistent studies of the changes in the last few weeks of pregnancy nor have there previously been attempts to determine the day of labor from changes in the vaginal epithelium.

Cytologic studies of the last weeks of pregnancy have revealed changes during the last few days as indicated in Chart 1. Throughout the earlier weeks of pregnancy desquamation of vaginal epithelial cells is in plaques and sheets. Between six days and one day before term these begin to thin out, although retaining a dense appearance, and on the day before delivery the desquamation of the vaginal epithelial cells is in the form of discrete individual cells. The "navicular cells of pregnancy,"* seen early and throughout the gestation, become fewer during these late days and are relatively infrequent on the day before delivery.

The cytoplasm of the cells becomes progressively paler in its staining reactions and the nuclei become smaller and less well stained. There is an increase in the number of leukocytes—a quite striking increase on the day before delivery—and the mucus on the cell spread increases progressively during the last week before delivery.

In the initial portion of this study, 115 sets of smears were obtained on the same number of women during various stages of pregnancy, including term and postterm, in labor and in the immediate puerperium. The cytologic criteria which Lemberg-Siegfried had proposed were applied to these slides and a definite diagnosis made as to the stage in pregnancy or the puerperium of each patient. This diag-

*The term *the navicular cell of pregnancy* was coined by Papanicolaou. In 1925 in describing the cellular changes associated with pregnancy he used the term *boat-like* in referring to the elongated or concave cells, some of them more or less collapsed and having a cytoplasm partially or totally plasmolyzed or vacuolized. In 1933 the term *navicular cell* was used and these cells were felt to be diagnostic of the presence of pregnancy. However, in 1946 Papanicolaou pointed out that this cell can appear in other types of amenorrhea and is not as uniquely characteristic as at first had been hoped. In the patients considered in the present communication, however, the diagnosis of pregnancy is not in doubt, but rather the date of its termination.



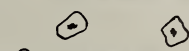

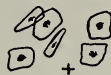













TYPE	UP TO 39 WEEKS ADVANCED PREGNANCY	1 TO 6 DAYS PRIOR TO "TERM"	1 DAY PRIOR TO DELIVERY
DESQUAMATION	 IN PLAQUES	 DENSE \pm	 DISCRETE
NAVICULAR CELLS	 ++	 +	 \pm
CYTOPLASM	 GOOD COLOR	 \pm GOOD COLOR	 PALE COLOR
CELL VITALITY	 +++	 ++	 \pm
LEUCOCYTES	 +	 ++	 +++
MUCUS	 \pm	 +	 ++

Chart 1.—Diagrammatic scheme of criteria in vaginal epithelial cells of stage of pregnancy (Lemberg-Siegfried).

TABLE 2.—Results of Study Attempting to Diagnose Stage of Pregnancy by Cytologic Examination of Vaginal Exudate

	Correct No.	Per Cent	Doubtful	Incorrect	Totals
Postpartum	17	100	0	0	17
Labor	6	60	2	2	10
Post "Term" delivery..	14	77	1	3	18
40 weeks gestation	24	73	2	7	33
36 weeks gestation	12	75	1	3	16
12 weeks gestation	16	76	4	1	21
Totals	89	77	10	16	115

nosis was then correlated with the stage of the patient's pregnancy at the time the smear was obtained. The correct week of gestation to correlate with each slide was determined after delivery, taking into account the size and weight of the baby, the actual date of delivery, as well as the history and progress of the entire pregnancy. The cells for the studies were obtained both by vaginal swab and by pipette aspiration of the posterior fornix in each patient and were stained by Shorr's technique.

The highest degree of accuracy in the diagnosis of these slides was obtained in the postpartum period associated with increased fragmentation of cells and the appearance of the "postpartum cell." This, however, is not of clinical assistance, and in the remainder of the determinations taken during preg-

nancy or while the patient was in labor the accuracy was considerably less (Table 2). Assuming that the incorrect diagnostic readings are misleading and that doubtful diagnosis is at best of no help, the proportion of correct diagnosis (excluding the postpartum determinations) was 73 per cent.

In the 14 patients whose histories would indicate that they were 41 weeks or more at the time the smear was obtained and whose babies showed some of the stigmata of postmaturity, the percentage of accuracy of the cytologic study reached its peak (77 per cent). While such data would indicate the possible advantage of definite diagnosis of "at term" in a disputed case of postmaturity, the high proportion of doubtful and incorrect readings would probably make this test unacceptable for wide applicability at present.

DISCUSSION

How the changes in the vaginal exudate come about is not clear. Lemberg-Siegfried further suggested that the intravenous administration of estrone in a patient near term would move the appearance of the vaginal cytologic smear farther to the right. Lemberg-Siegfried felt that if this particular sign were elicited, the diagnosis of being "at term" was even more convincing. However, in the present study sodium estrone sulfate (10 mg. intravenously) was

given to a small group of patients in the 36th to 38th week of pregnancy and no consistent shift in the cytologic content of specimens was observed.

Zondek and co-workers also studied the impact of administered estrogens on the pattern of arborization of cervical mucus. They expressed belief that in the first trimester, arborization of dried cervical mucus represents a bad prognostic sign from the point of view of both placental sufficiency, and also the outcome of the pregnancy in the early months. Their study included a smaller number of patients in the last month of pregnancy, but the data they reported do not indicate the clinical outcome of the pregnancy in those cases. The author is at present engaged in comparing the vaginal cytologic changes with the changes in the pattern of the cervical mucus in patients who are pregnant 41 weeks or more by history.

In commenting on the proportion of correct diagnosis of the stage of pregnancy from cytologic changes, it should be noted that these data represent the interpretation of the duration of pregnancy from the slide alone. Obviously in clinical practice, such a test would be considered in conjunction with other stigmata of postmaturity and placental insufficiency.

A control series of 114 patients whose menstrual history was correlated with the date of delivery indicates that in our clinic, relying on the menstrual history alone, the correct delivery date within 14 days could be predicted in only about 40 per cent of the pregnancies. Approximately the same proportion of patients deliver what appear to be term babies (based on fetal size and appearance, the date of quickening, the first determination of fetal heart sounds, etc.) more than seven days before the estimated day of confinement which their menstrual history would indicate (for an average of 17 days). For 20 per cent of the patients the average was more than 15 days beyond the estimated date, and they represented the group as to which the question of postmaturity would be raised. No single sign can be proposed at present that will give the antepartum diagnosis of placental maturity in all cases.

Once the diagnosis has been established, the solution of the problem from an obstetrical point of view is not clear-cut. Gibson pointed out that the chief cause of fetal loss is an acute accentuation of anoxia during the first and second stages of labor, presumably superimposed on the chronic anoxia which the fetus has already been experiencing. From this

reasoning he was opposed to the induction of labor in these cases, but his data could equally well be used to support the argument in favor of routine cesarean section in all such patients. Certainly in our own hospital, we have examples of babies with this syndrome who were alive when the patient was admitted to the hospital for induction but were still-born, the fetal heart sound disappearing during the course of the induced labor. In these cases, however, the situation was extreme and the diagnostic criteria had been evident for some time. On the other hand, the induction of labor had been successful in those patients in whom there were less pronounced degrees of this pattern.

It is of interest in this respect to consider how many of the standard techniques for the determination of the patient's being "at term" possibly represent an index of placental status. Naegle's rule, or calculation from the date of quickening has known wide variabilities. However, where reliable history is available and where such history coincides with the progressive examinations of the patient, these will give an indication of the date at which most placentas, or the average placenta, begin to achieve senescence.

The techniques revolving around the determination of fetal size—MacDonald's Rule or Ahfeld's Rule—presume a consistent fetal growth along an average pattern associated with a standard amount of fluid. Such fetal growth and such amounts of amniotic fluid are not consistent with the syndrome of placental insufficiency, however, and these techniques are accordingly rendered less useful.

The same statement applies to the determination of fetal size by x-ray examination. There is, however, no indication as yet that the progressive bone development and epiphyseal development is interfered with by the chronic malnutrition of an inadequate placenta. This roentgen sign indicates that the baby is mature enough and that its chances for survival should be improved, but gives no indication of the degree of distress that the baby may be experiencing.

Cervical "ripeness," the taking up of the lower uterine segment as the cervix shifts into the axis of the vagina, has long been relied on clinically as a prerequisite to term delivery. This sign, however, would indicate that the patient is ready to deliver, rather than that the baby is ready to be born, and once again bears no proved relationship to the degree of placental adequacy.

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Prosthesis for Child Amputees

The Program at University of California at Los Angeles

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THE CHILD AMPUTEE PROGRAM at the University of California at Los Angeles, in its third year of existence, is still in its infancy. The Engineering Department of the University has been doing significant research in upper extremity prosthesis for adults over the past ten years.^{9,10} The Juvenile Training Center of the Michigan Crippled Children's Commission has furnished a background of experience.^{1,2,5,6} The study of 100 cases in the UCLA program has confirmed the findings of the Michigan Commission and helped us establish some independent impressions. The UCLA experience is too brief to permit scientific conclusions, but exploration of this relatively new field has been begun, methods of operation devised, and impressions and an insight gained with regard to areas still to be developed.

The Amputee Program is a joint venture of the Medical School and the Department of Engineering. Each of the cases thus far has been studied by many disciplines: Orthopedics, pediatrics, engineering, prosthetics, psychiatry, occupational therapy, social service and physical therapy. Representatives of other specialties such as radiology, dermatology, neurology, plastic surgery, neurosurgery and pedodontia are asked to examine patients when problems within their particular specialty arise. The team concept, while relatively new, is becoming the accepted approach to complex medical and rehabilitation problems.

This project for research, teaching and service is supported by a grant from the Children's Bureau of the federal Department of Health, Education and Welfare, through the California State Bureau of Crippled Children's Services. A few patients have come privately to the Project, but the majority are referred by the California Crippled Children's Service. Most patients thus far have come from Southern California.

METHOD OF OPERATION

The patients and their parents are scheduled for arrival on Monday mornings. With them they bring

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• The Child Amputee Program has operated jointly for the past three years at the University of California at Los Angeles under the Department of Engineering and the School of Medicine. The following seven points have been evolved after three years of operation:

1. Team effort for involved rehabilitation problems seems to be more effective than any other approach.

2. Psychological effect on both the patient and family is much deeper than was realized.

3. The optimum age for first fitting of a prosthesis is much earlier than had been generally believed—under one year, as opposed to age five or later.

4. Training adequate for efficient and easy use of the prosthesis is absolutely essential and must be followed with periodic training in new skills.

5. Comfort and function must be provided or a prosthesis will not be used.

6. Scaled-down adult components are helpful, but do not supply all the needs of growing children. Special types of tools are needed for the many varied activities of childhood.

7. At the outset of the program, disability was calculated in terms of the site of amputation. Now it is realized that the true determination of disability is above the ears.

a complete two-day schedule of appointments, a map of University locations and a brief explanation of how the Project operates, which have been mailed to them in advance. Upon arrival, each patient is given a complete physical examination and a careful history is taken in the Pediatric Clinic under the supervision of the staff pediatrician. Suitable x-ray studies and laboratory work are ordered as needed. Orthopedic examinations are made of the affected parts and such treatment advised as is indicated. Parents and child are next interviewed by the Project director. Both patient and parents meet the prosthetist and occupational therapist and, later, are interviewed by the staff psychologist.

On Tuesday afternoon the Prosthetic Conference convenes with neither patient nor parents present at first. It is composed of Project director, orthopedic surgeon, engineer, pediatrician, psychologist, social worker, occupational therapist, physical therapist

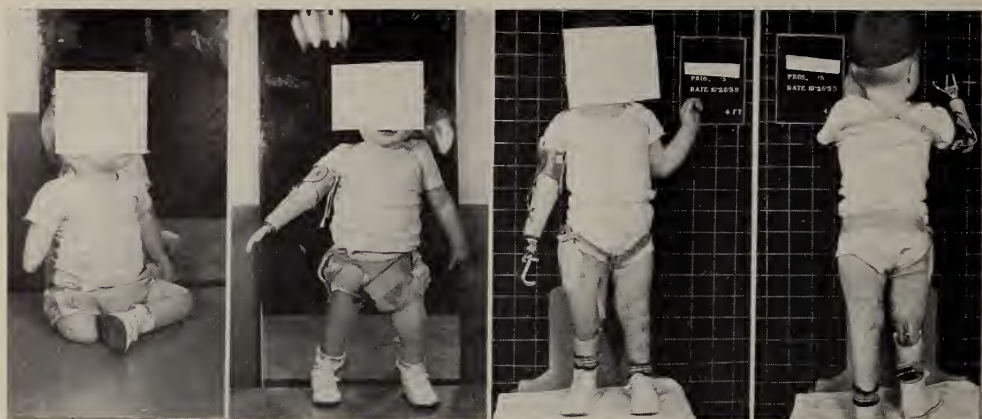


Figure 1 (Case 1).—Left to right: Below-elbow and above-knee congenital amputations; at 14 months, right pylon type lower prosthesis and infant passive hand prosthesis; front view at 2 years. Suction socket and knee flexion unit, and functioning hook upper prosthesis; rear view showing attempt at active use.

and secretary-stenographer. Findings in the case are presented by the medical student who first examined the patient. The staff adds any pertinent findings. The parents and child then are brought in. They are well enough acquainted with the individual members of the staff to feel at ease before the group. The parents are encouraged to ask questions of the entire group, and members of the Conference may put questions to the parents. This personal and friendly relationship between the parent and team members has been carefully developed to give the parent confidence and gain his cooperation.

After the family returns to the dressing room accompanied by a member of the team, the case is discussed and a course of procedure adopted. There may be physical preparation of the patient, such as surgical operation or physical therapy; or emotional preparation involving counseling and home adjustments that are needed before prosthetic prescription is made. Suitable appointments are scheduled for whatever procedures the team Conference advises.

The first plaster wrap of the stump may be made the next morning, Wednesday. The prosthesis is constructed from this master mold. Later the patient will have a final fitting and harnessing followed by careful "check out" and evaluation of the work with the parents present. A two-week training period begins. Out-of-town families obtain lodgings and remain during the period of daily training.

Each Tuesday the Conference team sees one or two new patients and five or six who have returned for further observation. An attempt is made to see each patient once in three months. The patient may, in the meantime, have been seen by the occupational therapist for training, by the prosthetist for refitting or repairs, by the psychologist or social worker for

counseling, by the orthopedic surgeon for operation or the pediatrician for other medical care.

The prosthetic devices for a large portion of patients with upper extremity deformity or amputation have been fabricated in the university's shops; but as experimental procedure for children becomes more standardized, an increasing number will be fitted by private shops making prosthetic limbs, as all lower extremity amputees have been so far. The engineering department has limited its research to upper extremities.

Some of the more recent engineering contributions are: The infant passive hand, a resilient infant below-elbow prosthesis, a plastic hook, a violin bow holder, a piano playing device, a baseball glove holder, a nylon cable liner, an outside friction elbow, a passive upper extremity prosthesis for small infants, an elbow lock lever for vestigial fingers.

The following case reports are presented to illustrate some of the problems of fitting, training, and adjustment that have been dealt with by the Conference Group at UCLA.

REPORTS OF CASES

CASE 1. A boy, first seen at one year of age, had a congenital absence of all leg components below the right knee and short components below the elbow on the right arm (Figure 1). There was some webbing on the right hand and the "good" foot was clubbed. The first year of his life was spent with corrective casts on the club foot and amputation of a nonfunctioning digital unit on both upper and lower right extremities. He was first fitted with a straight pylon-type right lower prosthesis without knee flexion which was fashioned at a private limb shop. On this, he immediately learned to walk in

only a slightly stiff-legged manner. About the same time he was fitted in the UCLA prosthetic shop with an infant passive hand. This he wore quite naturally and he learned to push and pull and hold large objects. In a few months the lower prosthesis had to be lengthened, although the socket continued to fit.

At age two he was felt to be ready for a suction socket and a knee flexion unit. This was fashioned at the same limb shop that made the first one. The knee is held from flexing by an elastic web to give stability. With this he stamps around with great glee; and cries out, "Don't take away my leg," whenever it is removed momentarily. At this time he had also outgrown his upper prosthesis and a new one was fashioned in the UCLA shop in such manner that either the passive infant hand or a No. 10X Dorrance hook could be interchanged. He amazed all members of the team by voluntarily opening his hook to grasp, at the age of 22 months. Although he does not use it consistently to any degree, he has continued to prefer the hook and cries loudly, "Don't take away my arm!"

Deliberate attempt was made in this case to explore the younger age limits of prosthesis feasibility. Much greater time will be needed for more evaluation, but this child seems to be happier, to ambulate and play in this more normal manner than he could if the prosthesis were withheld until an older age.

This child might have been fitted even earlier, as others have been at four months, had not his first year been spent in corrective casts for a club foot. While we have successfully fitted upper extremities at four months and had the patient make some use of them, this case demonstrates that at one year a child will accept and use a prosthesis that allows him holding activities with his arms and ambulation with his legs.⁴ The naturalness with which this child wears these prosthetic devices and the anxious concern over their removal, even temporarily, leads us to feel that he is developing a self image that includes his prostheses.

CASE 2. A girl, 16 years of age, was first seen at the age of 13 with a congenital very short below-elbow amputation. She was fitted with a very short below-elbow prosthesis with separate socket for the below-elbow stump and a two to one ratio step-up hinge. She was immediately given a No. 555 Dorrance hook with interchangeable APRL* cosmetic functioning hand (Figure 2). She learned immediately to use her prosthesis and wears it all the time, using the hook for eating and activities around the home. She wears the hand when she goes out, for school and for sports. She plays volley ball and soft ball, swims, and has just won a dance contest.

This case illustrates that in the upper extremity satisfactory fittings can be made at any conceivable level,⁷ even an extremely short below-elbow. There are no sites of election for amputation. Every possible piece of tissue should be preserved.

CASE 3. A boy, first seen in December 1954 at

*Army Prosthetic Research Laboratory.



Figure 2 (Case 2).—*Left:* Very short below-elbow congenital amputation. *Right:* Functional hook prosthesis, showing need of girl-size functional hand.

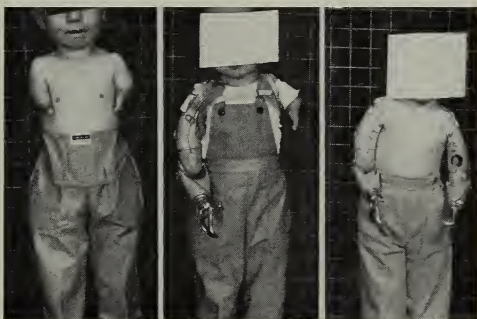


Figure 3 (Case 3).—*Left:* Difficult fitting problem in phocomelia type of congenital amputee. *Center:* Single right standard above-elbow prosthesis with chin-nudge elbow lock. *Right:* Bilateral above-elbow prosthesis with internal levers for elbow control.

the age of three, had a congenital bilateral above-elbow amputation with a single digital appendage at the end of each stump (Figure 3). He was fitted with a passive elbow and refitted with a right standard above-elbow prosthesis with a locking elbow and a left shoulder collar. At four years of age he had attained sufficient facility with this device that we felt it advisable to prescribe a left standard above-elbow prosthesis with a cut-out in the upper shell and internal mechanism to operate the elbow lock with the single finger. This he does quite well and is beginning to have satisfying function.

CASE 4. The patient, a girl 22 months of age, was considered as a candidate for prosthesis soon after birth. She was first seen in Prosthetic Conference at five months. She presents a tremendous challenge,



Figure 4 (Case 4).—*Left:* The patient at three weeks of age. *Center:* First stubby pylons to teach awareness of upper extremities. *Right:* Passive friction elbows. Infant passive hand on left side and standard hook for holding on right side.

having complete absence of upper extremities and very small and poorly formed lower extremities.

The patient was first put in a hip-spica cast to attempt better development of the acetabulum and hip joint, but since no improvement was made after several months and no normal femoral components could be identified, this was abandoned. She was fitted with bilateral shoulder caps with some short, stubby upper extremity pylons. With these she gradually learned some shoulder motion and was able to hold a few large objects (Figure 4). Later, she was fitted with longer upper extremity prostheses with infant passive hands and friction hinged elbows. With help at pre-positioning she was able to use these to some extent to hold a balloon or doll. When a hook was substituted for the infant hand and an apple placed in this hook, she was able to eat the apple quite naturally.

At 20 months she was fitted with lower extremity pylons, with which she is able to stand for as long as two hours; and she seems to enjoy doing so. Without any prostheses she is able to finger or toe some objects. She can experience a sense of exploring and feel with her foot and can pick up some things. She is permitted to continue to develop these functions.

Hers is one of our most challenging, difficult cases physically, mechanically and psychologically. Fortunately, the patient has good mental capacities. To persons who might well question how much ultimate useful function she may acquire, it may be said that we are certain that the attempt and the encouraging attainments so far have produced a profoundly wholesome and much needed emotional outlet for the parents, and this attitude is reflected in a very

happy, outgoing child. All this would have been lost had the patient been allowed to lie listlessly in bed.

CASE 5. The patient, a 6-year-old girl, was born with complete absence of both legs at the hip and bilateral above-elbow amputation. She was first observed by the UCLA team when 5 years of age (Figure 5). X-ray studies showed upper humeral elements and no lower extremity except an isolated head of the right femur. When first seen she had already learned ambulation by simple pelvic rotation. A brace shop near her home fitted her with a scooter and with push crutches for her arms, which contributed greatly to the development of the shoulder muscles. In the UCLA prosthetic shop she was fitted with bilateral standard above-elbow prostheses (Figure 5). With patient training and conscientious support by the parents, she learned some dexterity. For some time, however, she tended to concentrate on the right and ignore the left.

After six months of training and use of the upper extremities, it was decided to recommend prostheses for the lowers. Realizing that all walking must be accompanied with pelvic rotation only, a bucket-type device strapped firmly to the pelvis and with rather short pylons that could accommodate shoes was constructed by a private limb shop. The device gives her a great deal of self confidence and pride and permits her to walk across the room with relative ease.

This girl now attends a school for the handicapped. She is able to hold a book and turn the pages; she writes on the blackboard; she assists, although not completely, in feeding herself. She would be able to get out of her lower prostheses and into a

chair and back into her prostheses alone were it not for the danger of falling.

She is a very bright, cooperative, persistent and happy girl who, with the understanding parental help which she has, should be able to continue to make remarkable progress. Her accomplishments are a monument to adequate training,^{8,11} parental understanding and cooperation. Intelligent determination may well compensate for what she lacks below the hips and elbows.

FORWARD PLANS

The experience thus far has shown need for research and development in the following areas:

1. The possibilities of prevention of the need for prostheses by: (a) Careful study of the effects of adverse prenatal environment on the fetus and the correlation of these and similar studies on other congenital defects; and (b) surgical reconstruction in some special cases in which grasp can be attained

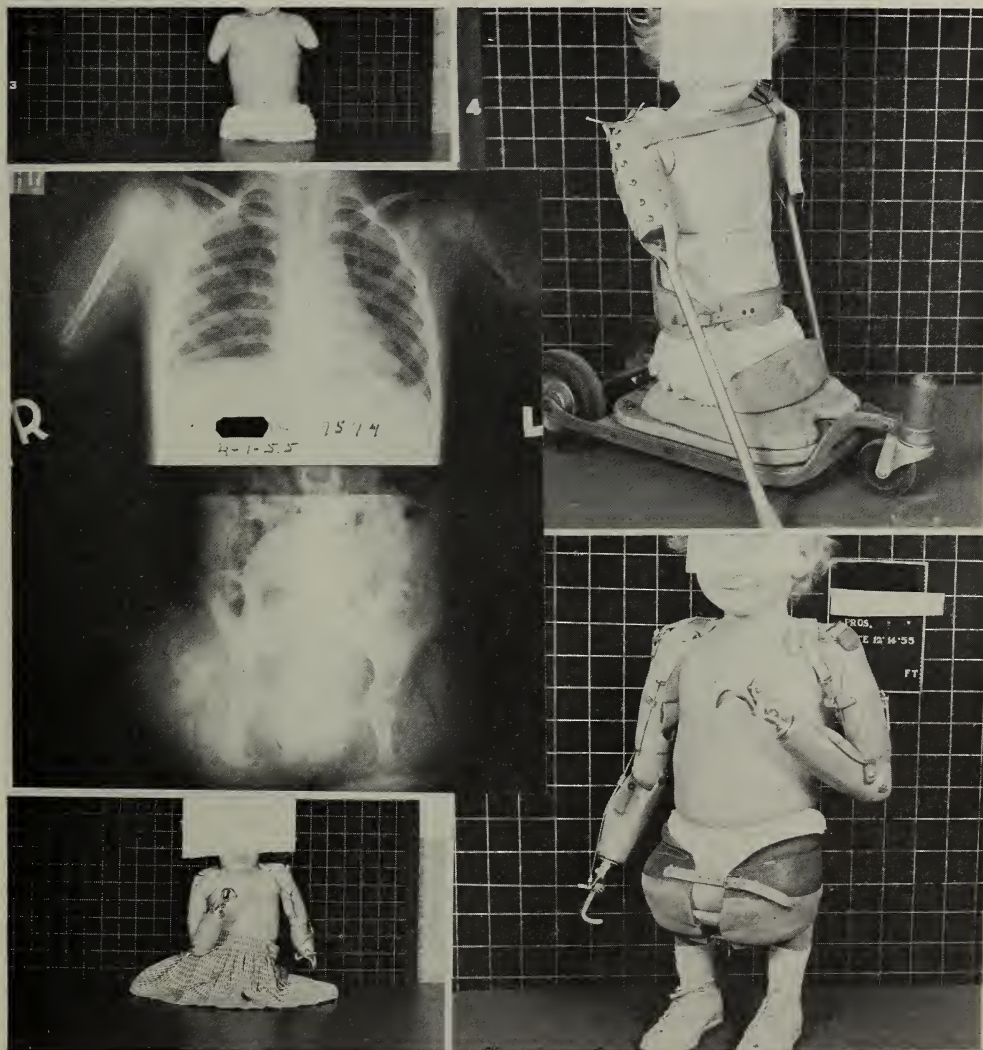


Figure 5 (Case 5).—*Upper left:* Statuesque torso with short upper arms and no lower extremities. *Center left:* X-ray films showing well formed upper humeral elements and no lower extremity components except right femoral epiphysis. *Upper right:* Cart and special arm pushers that aided greatly in developing muscles of shoulder girdle. *Lower left:* Wearing first standard above-elbow prostheses at 5 years. *Lower right:* Learning coordination of the upper extremities and bucket type seat with pylon legs for early "walking" and balancing.

and the advantages of tactile sensation will be more useful than a prosthesis.

2. The adapting of materials and devices to meet the demands of specific developmental ages.

3. The study of psychological effects of wearing or not wearing a prosthesis on the patient and family, including a development of his self image.

4. Development of integrated training programs that can be continued in the patient's home and community.

5. The effect of wearing a prosthesis on the growth and development of the stump as well as the neuromuscular and skeletal development.

6. Development of some kind of socket material that will allow for growth.

7. Development of some type of porous material that will allow skin respiration.

8. A small sized hand (in process of development) is greatly needed for adolescents—especially girls.

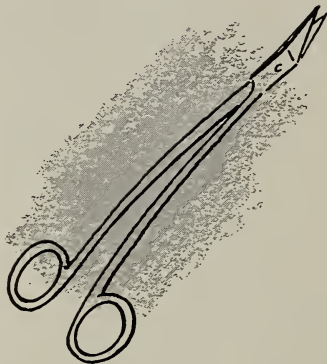
9. Formulating methods of disseminating con-

crete findings and developments for use of private physicians and the limb industry.

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Nalline: An Aid in Detecting Narcotic Users

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OCCASIONALLY a physician is called upon to determine the presence or absence of a narcotic in a patient. History and physical examination are often inconclusive. A rapid and positive test is available in Nalline® (N-allylnormorphine). Nalline, although a narcotic, has little or no analgesic effect. It is an antagonist to morphine and its derivatives and has three distinct clinical uses: "(1) The prevention and treatment of respiratory depression in the newborn, (2) the treatment of poisoning with narcotics, and (3) the diagnosis of physical dependence (active addiction) on narcotic drugs."² Isbell^{1,2,3} and co-workers at the United States Public Health Service hospital, Lexington, Kentucky, demonstrated that Nalline when administered to a patient addicted to heroin, morphine, Dilaudid®, or methadone will produce withdrawal symptoms within a few minutes. The drug apparently acts upon the central nervous system in such a way as to abolish certain effects of narcotics. As a result, Nalline can be used as final proof of suspected narcotic addiction.

In the past year, 454 patients suspected of using an opiate have been tested with Nalline. The agencies that have used this test and the number of persons tested are listed in Table 1.

The technique of the test is simple. First a history is taken. This history will include the patient's story of addiction, which should be viewed critically. A

- By using—with the permission of the subject—a simple test entailing injection of Nalline® (N-allylnormorphine) and noting the reaction in the pupils of the eyes of the subject, it is possible to determine whether a patient is addicted to a narcotic, is an occasional user or is a nonuser.

physical examination is made to rule out any deviations from normal. The physician should note the presence or absence of needle marks. The arms, legs, hands, and feet are the primary sites for marks; the abdominal wall, buttocks, scalp and nose are secondary choices. Tattoos over the antecubital fossa sometimes are placed there to cover needle marks.

Permission to give the test, in the form of an authorization and waiver, should be obtained from the patient. The form used is worded as follows. It must be signed by the patient before two witnesses.

I, (*name of patient*), do, of my own free will, hereby expressly authorize (*name of physician*) and the (*name of agency involved*), or their authorized agents, to administer an injection or injections of Nalline.

It is understood that such tests are to be conducted for the purpose of determining whether or not I am or may be under the influence of narcotics. I freely and voluntarily submit to these tests which I believe are for my own best interests.

I authorize the use of the results of these tests in any way which these officials may feel is proper. I do hereby expressly exonerate (*name of physician*), (*name of agency involved*), and all their authorized agents from any liability resulting from the administration of the above-named tests.

(*Signature of Patient*)

Dr. Terry is Medical Officer, Office of the Sheriff, Alameda County, Santa Rita Rehabilitation Center, P. O. Box 787, Pleasanton. Mr. Braumoeller is an Inspector with the State of California Bureau of Narcotic Enforcement, State Building, San Francisco.

Sharp & Dohme supplied the Nalline used in this study.

NOTE: California law provides that a physician may prescribe, furnish or administer narcotics to a patient when the patient is suffering from a disease or injury attendant upon old age, *other than narcotic addiction*. In addition, a physician may prescribe, furnish or administer narcotics when, *in good faith*, he believes the disease or injury "requires such treatment." However, when acting under the good-faith belief that narcotics are required, the law specifies that he shall *only* prescribe, furnish or administer narcotics "in such quantity and for such length of time as are reasonably necessary."

It is to be noted that narcotic addiction may not be treated under the above-listed authorizations.

California law provides that narcotic addiction may only be treated in an institution approved by the Board of Medical Examiners, in a jail or prison, in a state narcotic hospital, or in a state or county hospital. To this legal limitation on treatment for addiction there is one exception, as follows: This section does not apply during emergency treatment or where the patient's addiction is complicated by the presence of incurable disease, serious accident or injury, or the infirmities of old age.

All of the foregoing provisions of California law must be borne in mind in reading or applying the accompanying article.

TABLE 1.—Agencies Using Nalline Test and Number of Tests Performed

	No. of Cases
Oakland Police Department.....	239
State of California Parole Office.....	75
Alameda County Sheriff's Department— Santa Rita Rehabilitation Center.....	41
State of California Department of Motor Vehicles....	12
Richmond Police Department.....	12
Alameda County Probation Office.....	58
State of California Bureau of Narcotic Enforcement..	4
Hayward Police Department.....	4
San Leandro Police Department.....	2
Federal Narcotic Bureau.....	1
Alameda County Public Defenders Office.....	1
Private attorneys	5
	454

Next the diameter of the pupils of the patient's eyes are measured.* Nalline is administered subcutaneously in a dose of 3 mg. Thirty minutes later the diameter of the pupils is again measured. If the person tested has not been using opiates the diameter is reduced by 0.5 mm. to as much as 2 mm. In a person who has been using opiates occasionally but who is not addicted, the pupils will remain unchanged in size. In a person who is addicted, the diameter of the pupils will increase by from 0.5 to 2 mm., the amount of increase depending upon the degree of addiction. Associated with this pupillary dilation is the development of withdrawal symptoms—gooseflesh, yawning, nausea and vomiting. As soon as withdrawal symptoms in addition to dilation of pupils appear, Dilaudid or morphine sulfate should be administered. Dilaudid, 8.0 mg., is given subcutaneously to patients who are addicted to heroin or Dilaudid. Morphine sulfate, 30.0 mg., is given subcutaneously to patients addicted to morphine sulfate. Administration of Dilaudid or morphine sulfate may be repeated in 20 to 30 minutes if there is further distress. The observation of gross withdrawal symptoms should not be depended upon for a diagnosis but should be avoided if possible. To some degree patients themselves can control withdrawal symptoms. The pupillary response alone is an accurate, sufficient, and sensitive index of narcotic addiction or of occasional use, or of the absence of narcotics.

Sometimes when Nalline is given, a person who has not been using opiates may have symptoms that resemble withdrawal symptoms. Perspiration, nausea, apathy and peripheral vasoconstriction have been noted in such circumstances. One young female

heroin addict who had not been using heroin for some months developed syncope after receiving an injection of 5 mg. of Nalline. She recovered in 30 seconds without treatment. In these Nalline reactions, in contrast to Nalline interacting with an opiate, the pupils constrict. If the patient is uncomfortable from Nalline alone, a barbiturate is indicated. Nalline has little if any effect in the patient who has been using either codeine or meperidine.

USES OF THE TEST

Examples of uses of the test follow:

CASE 1. A 23-year-old white man who was an inmate of Santa Rita Rehabilitation Center for five months was suspected of using heroin smuggled into the institution. This man had a long history of heroin addiction beginning in his late teens. There were no recent needle marks. He was given 3 mg. of Nalline. Before the injection, the pupils were 3.5 mm. in diameter. Thirty minutes later they were 2 mm. He was released to duty, the test being negative.

CASE 2. A 19-year-old boy was referred by the State of California Division of Motor Vehicles. His driving license had been revoked because of addiction to heroin and he had served a two-year sentence at one of the Youth Authority centers. He denied the use of any opiates since his discharge six months before. There were a few recent needle marks over the right antecubital fossa. An injection of 3 mg. of Nalline was given. The diameter of the pupils before the injection was 4 mm. Thirty minutes later the measurement was the same. No other withdrawal symptoms developed. When confronted with the positive result of the test, he admitted taking three injections of heroin during the previous week. His driving license was not restored.

CASE 3. A 34-year-old white woman was referred by the State of California Bureau of Narcotic Enforcement. She had a history of using heroin occasionally over the preceding two years. At one point a year ago, she stated, she was addicted. She said she had not used any opiates for a number of weeks. There were no recent needle marks. The pupils were 3 mm. in diameter before the Nalline injection. Thirty minutes later they were 4 mm. When told that this was a positive reaction, the patient admitted sniffing heroin two or three times a week over the past two months. The last "sniff" was two days before the test. No additional withdrawal symptoms occurred.

CASE 4. A 22-year-old white man was referred by the State of California Parole Office. He stated that he had been a minimal user of heroin from 1950 to 1952. He was convicted on a burglary charge, served a period of 18 months at a state penitentiary and had been on parole for seven months. The parole officer, basing his opinion on the physical appearance of the parolee, felt that the

*The pupils are measured with a "pupillometer," which is a 1 x 3 inch card that contains a series of solid black dots varying in diameter from 1 to 5 mm. With a little practice the size of the pupil can be measured to within 0.5 mm.

parolee was once again using heroin. This the parolee denied. The only recent marks were on the dorsum of the right hand. Before an injection of Nalline, the pupils were 3.5 mm. in diameter. Twelve minutes later they were 5 mm. The patient was perspiring a little and had gooseflesh on the upper part of the back. He was mildly nauseated but there was no vomiting. Morphine sulfate, 30 mg., was administered and the symptoms abated. The patient then admitted privately that he had been taking morphine sulfate up to 0.3 gm. daily for the preceding three months. The reaction in this case is an example of the degree of response to Nalline in a person moderately addicted to morphine.

CASE 5. A 28-year-old Negro man volunteered to take the Nalline test. He admitted freely that he was heavily addicted to heroin and had been so for months. There were many old and recent marks on both arms. His last injection of heroin had been taken 18 hours previously. He was given 3 mg. of Nalline. The pupils before the injection were 3 mm. in diameter. Five minutes later they were 5.5 mm. in diameter. The patient was yawning and had generalized gooseflesh. Nausea and vomiting immediately followed. He was given Dilaudid, 8.0 mg., which only partially controlled the symptoms. The dose was repeated 30 minutes later and the patient became comfortable. This case is an illustration of a severe reaction to Nalline in a person heavily addicted to heroin.

DISCUSSION

The recommended dose of 3 mg. of Nalline is small but is large enough to produce withdrawal symptoms in patients who are addicted. Patients who are occasionally using an opiate, without addiction as yet, will have a positive pupillary reaction to Nalline in a majority of cases. A small proportion of cases will be missed, but, more important, Nalline in this amount can be given safely.

Nalline has proved to be a helpful and safe procedure in diagnosing narcotic use and addiction. The physician can protect himself and be of specific service to his state, county and city narcotic officers by using this test. The patient who glibly describes symptoms for which narcotics are indicated, or who directly asks for them for a not easily diagnosed malady should most certainly be considered for a Nalline test.

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Reflections on Contemporary Psychiatry

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A LITTLE REFLECTION on psychiatry as it is practiced today points up the need to examine some of the basic concepts and practices and, if possible, their effects. We use terms like "mental health" and "reality," but can we really adequately define them? When we refer to mental health, are we using it in a social sense (referring primarily to the individual's relations with society and the interrelations between different societies) or in a medical framework (referring primarily to how the individual feels and functions), or both? Are we thinking of the degree of psychopathologic change that is present or the degree of disability, or both?

We have learned that these are two different things. A person may have a great deal of psychopathologic disturbance but be only slightly disabled. Furthermore, the degree of disability in a given person varies greatly from time to time in response to external dangers and changing motivations.

The ability to get along with others with a reasonable degree of happiness and satisfaction and productivity is generally considered the criterion of mental health. This at least is an important aspect of the goal of psychotherapy, which attempts to help patients see reality so that they may adjust to it more satisfactorily. One difficulty is that reality has a way of changing, sometimes quite suddenly. Mental health, more obviously than physical health, is intimately bound up with motivations. Can we say that mental health, like physical health, is concerned with an increased ability to survive? If it is, does it encompass being willing to risk one's life for a cause when the chance of survival is known to be nil, but when it seems apparent that someone has to make the sacrifice? Or does mental health imply the ability to get along in any culture without faltering, a relative acceptance of what is? Or does it entail the willingness to fight even when it might be very unhealthy to do so? Such philosophical considerations are ordinarily burdensome, but the time may come when we shall have to answer such questions, and the chances are that opinions will differ greatly on what mental health is.

Perhaps it would be easier to consider the problem from another direction, that of mental illness. We talk of prevention of mental illness, but then when we try to measure it, we have no truly reliable

- Valid data on the effectiveness of preventive programs in psychiatry are badly needed but cannot be obtained until reliable statistics on incidence and frequency of emotional disorders are available.

There is a suggestion that clear cut neuroses are less frequent but an equally strong suggestion that psychosomatic disorders are increasing in frequency. There is a tendency to look upon the increasing freedom of some aspects of our culture as a great advance over Victorian rigidity and restraint—but to what extent is this related to seeming increases in delinquency?

Parents seem to have become increasingly fearful of disciplining, training or frustrating children as a result of what is considered psychiatric teaching. Psychiatry has the responsibility for correcting such a misunderstanding. Psychotherapists who have not resolved their own dependency needs are in no position to help others with the dependency problems which underlie their neurotic difficulties. Psychotherapy involves more than just arranging the world to accommodate itself to the patient (which occasionally needs to be done). The patient too, has a responsibility for his illness and its treatment and must learn that life is characterized by the need to take some chances, by dangers, difficulties, frustrations and unknowns, as well as pleasures, safety, comfort and the familiar. The responsibility for meeting the need for psychiatric services belongs to all of medicine and not just to psychiatry.

baseline of overall incidence to start from (as can be done with typhoid or diphtheria). With all of the psychotherapy being practiced, with all of our guidance clinics and mental hygiene programs, have we ever decreased the incidence of mental illness? Have any of the programs which we so hopefully depend upon had any preventive effect? We know from our experience that we are helping some people and that as our knowledge and skill and numbers increase, more and more are being helped, but we are in the position of carefully nurturing and weeding a small garden that is surrounded by miles of weeds and underbrush that spreads many times faster than any enlargement we make in the garden.

There are many good indications of the magnitude of the problem of emotional health: The number of men and women who were rejected for military service for emotional disorders; the number of men and women who are receiving compensation from the federal government for emotional disorders; the increasing number of patients in state hospitals; the incidence of crime and suicide;

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studies of communities such as were done by Lemkau¹ in Baltimore and Mangus² in Ohio.

There is need, however, to establish firm and reliable incidence and frequency baselines. These, in turn, depend on the establishment of firm criteria, which in turn, depend on the definition of mental health or, rather, ill health, which in itself is complicated because, like the common cold, it is something that practically everyone has at different times and to varying degrees.

It is disturbing to consider the possibility that, despite all our efforts directed toward helping individuals and toward developing community programs, the incidence of emotional disorders may be increasing (certainly we have no indication that it is decreasing). There is a suggestion that clear-cut neuroses such as used to be seen are less frequent, perhaps because their meaning has been exposed; but there is an equally strong suggestion that psychosomatic disorders are increasing. Like the criminal who goes into hiding when in danger of being detected, conflicts and unacceptable feelings and impulses may go more deeply underground and evidence themselves by disturbed bodily function which is even more difficult to treat. This in no way implies that we should abandon our treatment of individuals in private offices or clinics, but it does mean that we cannot continue to bank on these efforts as the ultimate solution to the problem and enjoy the feeling of making real progress until we can prove, in ways that are more convincing than the ways we have at present, that we are making a significant contribution to the overall health of the nation. Medical colleagues, who are skeptical about some aspects of psychiatry and its methods, constantly ask for proof that its contentions are true. Will psychiatrists be like the medical scientist who discovers the cause of typhoid fever and then goes on to develop a preventive program that practically eliminates the disease, or will they be like the astronomer who by careful observation establishes sound hypotheses which permit him to predict accurately but provide no means of changing the events he predicts.

There is always in most persons an undercurrent of dissatisfaction which has deep roots in our personalities which prompts us to improve things, to improve our lives, our comfort, our safety and the world for our children. Do we have a tendency to look at only one side of the coin, to consider what we are buying and not the cost? What price have we paid for the radical change in our culture and standard of living over the past one hundred years?

Is the universal longing for the good old days (of the past) merely the manifestation of the desire to return to the womb, or the breast, or the bottle, or is it in part a recognition that with an increase

in the good, there is an increase in the bad or undesirable, the part that only the spoil-sport calls attention to? Perhaps it is not fair to recall the fate of past cultures like those of Rome and Greece that had it so good. In their time, it seemed that progress almost beyond imagination was being made in human welfare.

We tend to look back a little smugly, and sometimes critically, on the rigidity and repressive character of the Victorian Era. We can point with some pride to the decrease in conversion reactions that seemed to accompany a freer attitude toward sex and anger (a development that is certainly attributed, correctly or not, to psychiatry). A comparison of the incidence of hysteria in World War I and World War II is quite dramatic and it is doubtful that the difference is just a semantic one. What, however, has occurred to the incidence of "acting out?" Is there any relationship between the increasing problem of delinquency and our greater freedom? Or is this related, as some observers would suggest, to the changing role of women (and men) in our culture, which again is heralded by claims of great progress? Or is it, as some sociologists would claim, that there is no increase in delinquency, but that the criteria for delinquency have changed in a society that tolerates less and less misbehavior in its young.

It is of interest that with a relatively low birth rate, there is an increased concentration on the welfare and needs of the fewer children. While on the one hand this seems to be desirable and good for the children, in that their needs are satisfied, it can also promote an increase in the children's expectations that their needs will continue to be satisfied by the big world as it was done earlier in the little world of their families, while at the same time more may be demanded of them in the way of social conformity. It is difficult to know where all this ends, but many seem to believe that in our culture there is a progressive increase of an attitude of "who is going to take care of me?" or of an expectation that it is "someone's (usually the government, which means everyone else) responsibility to take care of me," together with increasing resentment regarding the restrictions and relative impotence that accompany a dependent relationship. This is somewhat related to another problem.

One frequently hears complaints that schools are too permissive, that not enough is being demanded of children, that training or self-discipline, for themselves, are bad. Parents seem to be increasingly fearful of frustrating children, of disciplining them, of training them, of disappointing them, and even of depriving them of the freedom of witnessing their intimate activities in bedroom and bathroom. Strangely, psychiatry is used as the authority.

It becomes the responsibility of psychiatrists to look to our practices to see if we are responsible; and, if we are not, should we be doing something to correct so serious a misunderstanding?

Forel, the famous Swiss psychiatrist, was struggling with the problem of the alcoholic. He was brought up when the prevailing attitude was that if alcoholics were deprived of alcohol, it would lead them to death or suicide. In other words, it was looked upon as a need that had to be satisfied. Such was the traditional logic of those days. In 1884, Dr. Forel, upon learning that his shoemaker was a total abstainer and the chairman of a temperance society, made arrangements to send every alcoholic in his hospital to the shoemaker, with an attendant, and to meetings of the society. For the first time in his life, Forel said, he saw drunkards recover, truly and lastingly cured. Thereafter the part played by Dr. Forel in the treatment of the patients was less and less, and finally the psychiatrist asked the shoemaker to explain. The shoemaker replied: "It is very simple. I am an abstainer and you are not. This is the secret. You cannot teach others convincingly that which you do not do yourself." (This is truly remindful of Alcoholics Anonymous of today.)

Psychiatrists consistently see exaggerated dependent needs underlying neurotic difficulties (the term here used in a broad sense). Perhaps it is traditional logic, today, that such needs must be gratified; and perhaps only when psychotherapists who deal with neurotic dependency problems have, through self-understanding, resolved their own dependency needs, will they be able to teach their patients convincingly.

One hears a great deal of talk about mothers rejecting their children, of advice to mothers to love their children. How can someone produce love on demand? It is as if to say that unless the mother is amiable, undisturbed and understanding, unless she is thinking only of her child and its comfort, she is "rejecting" is not "loving." This kind of propaganda (which seems to stem from the proponents' identification with the so-called rejected children and their own needs for the "wonderful mother") carries with it the danger of aggravating mothers' anxieties and impairing what healthy instinctive behavior they might manifest over and above their neurotic behavior. Blaming Mother is an easy way to explain an individual's emotional difficulties. But why was Mother the way she was?

Mobilizing hatred for parents is not enough, and should not be the goal of treatment. Rather it should be understanding others' needs and problems (including those of parents) as well as one's own. Often the anxious mothers (and fathers) identify with their children and attempt to provide the cotton wool environment for them that they themselves continue to seek in a neurotic way. When they are encouraged

in this by professional advisors, the problem in the long run can only be aggravated. The child is not helped in his struggle to face and cope with life. The world is not going to treat him in the same over-protected way. All mothers love their children, except those who are very sick and probably psychotic. Their love may be colored, distorted and adulterated by their neurotic difficulties, but that does not mean they do not love their children. They may be unrealistic, torn by conflicting feelings, frustrated, bitter, unhappy, and their feelings may "muddy the water." To indiscriminately attribute a patient's continued oral cravings just to a mother's rejection is to deny one of Freud's great discoveries, that of conflict and regression. It as often may be a defense against sexual and other fears, an attempt to solve conflicting childhood sexual desires, as it is what it appears to be on the surface.

It is a strange thing, but parents may have to punish children, frustrate them for their own good—and when someone does something for another's good, it is a manifestation of love. Treating a child as if it could not stand any pain or frustration is not loving the child, but loving one's self. Even sibling rivalry which develops in the child somehow gets blamed on Mother. The hatred which the child develops toward a younger or older sibling may be rationalized by all kinds of memories of preferred treatment (and sometimes this has really been the case), but basically the "rivalry" often is the black-or-white, all-or-none attitude expressive of an insatiable wish for all the attention.

An extension of this practice is to blame mental illness on the government, or on conditions, or to emphasize cultural forces (many of which undoubtedly exist)—to emphasize, indeed, anything except the role the individual is playing in his or her own difficulty. Particularly during the war, psychiatry was accused of permitting the weak to hide behind the skirts of psychiatry, of being too protective and of mollycoddling. There are many possible reasons for this. Psychiatrists were bold enough to insist that people might be incapacitated by emotional difficulties short of psychosis. This was something that everyone knew—but it was felt that emotional difficulties should be considered a weakness, a failure of responsibility, a preoccupation with one's own needs and feelings to an exaggerated degree, and, therefore, something to be treated with contempt, ridicule and even punishment. It was felt by many persons, and perhaps especially by those who were struggling with their own emotions—"but not giving in"—that if the psychiatric patient was treated with sympathetic understanding, it would encourage a lot of others to seek the same kind of treatment.

The psychoneurotic was looked upon as a coward who gave in to his fears; and since in wartime a

great many people were afraid, it was feared that a sympathetic approach to those who could not cope with their fears would create an avalanche of psychiatric disorders that would decimate the ranks of the army. Unfortunately, there were a few psychiatrists who, perhaps through lack of understanding, assumed purely protective roles and considered environmental manipulation the only possible approach. To some extent this probably exists in civilian life, and apparently we psychiatrists have not yet convinced our colleagues in medicine that it is possible to be understanding and sympathetic but not protective; that psychotherapy involves more than just arranging the world to accommodate itself to the patient (which occasionally needs to be done); that the patient, too, has a responsibility for his illness and its treatment, and that life is characterized by the need to take some chances, by dangers, difficulties, frustrations and unknowns, as well as pleasures, safety, comfort and the familiar.

The patients of psychiatrists learn this, but somehow these concepts have not yet been transmitted to medical colleagues who still suspect that in the privacy of psychiatrists' offices patients are encouraged to act out their suppressed desires without regard for convention or mores.

Medical colleagues still manifest their natural resistances to accepting psychiatric concepts and there exists a tremendous need for education in this area. We continue to witness the separation of psyche and soma and we are just beginning to show in a convincing way that illness is multi-determined and not just something that can be explained by roentgenography and bacteriology. Intensive work with individual patients has taught us much, but it has tended in some instances to isolate psychiatrists from the rest of medicine. This, plus the public's traditional concept of the physician as one who deals with physical illness, medicines and operating rooms, contributes to the confusion in the public's mind about what kind of physician a psychiatrist is. It is not very clear, in the public's mind, how he differs from the psychologist who, to a greater extent than the physician-psychiatrist, has become identified with child guidance. The unique training of the psychiatrist in both organic and psychogenic disorders gives him a special competence gained in many instances through great personal sacrifice. It is gratifying to see how many have been eagerly awaiting the opportunity to pass on their experience to students of medicine and psychology and other allied professions. The need for their services will surely increase as time goes on. There appears to be little prospect of the psychiatric specialist's even coming close to meeting the tremendous demands from hospitals, clinics, correction institutions and industry. This would seem to be the responsibility of all of

medicine and not just psychiatry. Basic training in the fundamentals of psychiatry and psychotherapy must be included in the undergraduate medical curriculum so that all physicians will have some competence to deal with the infinite number of emotional and behavioral problems for which they are consulted. The physician with special training in psychiatry will continue to lead the way through basic and clinical research coordinated with internists, dermatologists, pediatricians and oncologists, assisted and in many instances guided by other members of the psychiatric team which is gradually expanding to include the social scientist. Maybe psychiatry is not too far away from the controlled studies, based on valid designs, that have been demanded of it for so long. Maybe psychiatry can come to grips with the problem of the continually increasing numbers of patients in state hospitals even though many highly trained psychiatrists show little interest in this sickest group of patients, often avoiding getting involved with such patients and many times not even being familiar with the technique of commitment.

We must do what we can to discourage the building of state hospitals in remote areas. Their continued isolation symbolizes the wish to get psychotic patients out of sight and out of the way. The public needs to face the problem, not deny it—if for no other reason than economic. How many people know that over half of all the hospital beds in the country are for psychotic patients.

While we have been studying personality disorders and neuroses, the care of the totally disabled, the sickest patients, has been left to the occupational therapists, educational therapists, psychologists, social workers, hospital attendants, recreational directors and even volunteers. Our teachers failed, and perhaps we are failing, to interest the younger physicians coming into the specialty in the truly tremendous opportunities for research and rewarding work in the state (and Veterans Administration) hospitals. A British colleague was amazed to learn that in our land of plenty there are still state hospitals without a single trained psychiatrist on their staffs. Who but the physician should take the initiative in improving the conditions of state hospitals throughout the country so that positions in them will be eagerly sought instead of actively avoided. Unless we rise to the responsibility, the public may look to other groups for help they expect to get from physicians.

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Industry Calling!

Is There a Doctor in the House?

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"IS THERE A DOCTOR IN THE HOUSE?" is a call that physicians sometimes respond to with reluctance, for the circumstances are often unfavorable to the best use of professional skills. Now, however, there is a new call—faint but growing louder—that we can respond to without reluctance. Now is the time to prepare to answer it. It cannot be ignored by organized medicine. I refer to the call of growing medical needs in industry from both management and labor.

My discussion will be confined to the preventive, diagnostic and medical administrative activities commonly provided in the larger industries of the country today. I shall not discuss comprehensive medical care such as is now provided in some union health centers and by some group insurance plans to which either union or employer, or both, subscribe.

My purpose is to call your attention to industry's need for wise medical guidance and service which can be met only by physicians with an understanding of industry's needs and opportunities. This means an understanding of at least the more common toxicological problems, a sense of the vast opportunities in preventive medicine to safeguard and preserve the health and productivity of the worker, and of the important part medical knowledge and wisdom play in cooperating with management and unions in job placement, and, finally, an awareness of the opportunities that exist for much needed research in the whole field of occupational medicine.

URGENCY OF INDUSTRY'S NEED

Medical service is needed in industry today as never before. In many parts of the country, especially the West, industry is just beginning to awaken to this need. The medical profession is as yet largely unaware of it. Unless we, as physicians, are prepared to heed this call, there is danger that management

• Medical service is needed in industry by both management and labor as never before. Industry is just beginning to awaken to this need. The medical profession is largely unaware of it. Unless physicians are prepared to heed this call, there is danger that management and labor will come to a bipartisan agreement over the bargaining table which will specify the amount, quality, and price of medical service irrespective of the effects of such an agreement on the practice of medicine. Such agreements should invariably be tripartite—between management, labor and medicine—if we are to continue to strive for medicine's traditional ideals: The best of medical care for all alike.

This situation imposes at least two important obligations on organized medicine at the national level and especially at state and local levels where there is industrial concentration:

1. Provision of a strong and competent committee or council whose members are especially interested in occupational medicine and who will make their presence known to management and labor alike, offering to advise with them on all medical problems, to mediate their disagreements or medical questions, and to help them attain a common goal.

2. Assisting the members of organized medicine who are interested, to learn more about the medical problems peculiar to occupational health.

and labor will come to bipartite agreements over the bargaining table which will specify the amount, quality, and price of medical service irrespective of the effects of such agreements on the practice of medicine. Such agreements should invariably be tripartite, among management, labor and medicine if we are to continue to strive for medicine's traditional ideal: The best of medical service for all alike. This ideal will be attained sooner if we can preserve the freedom under which medicine is practiced in this country today.

SOME REASONS FOR IT

The present-day situation has caught many of us by surprise. It has evolved as a result of profound sociological changes which have come about rather recently and rather swiftly. Among these changes are:

The author is second vice-president, Metropolitan Life Insurance Company, and chairman of the Council on Industrial Health of the American Medical Association.

Guest Speaker's Address: Presented before First General Meeting at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

1. Unprecedented Migrations During and After the War

In this period of full employment and high wages thousands of families have left the farm to go to the cities to seek higher incomes. Families living in the cities have moved to the suburbs. There has been a special migration from the northeastern and north central states to the western states. California alone has gained six and a third million inhabitants since 1940. The migration to this state continues, showing a gain of two and two-thirds millions since 1950. If the present rate continues, California will exceed New York State in population in 1967.⁵

2. Fringe Benefits in Lieu of Increased Wages

One of the most important occurrences in the industrial life of our nation may have escaped our attention when it first happened. This was a ruling by the courts in 1949 to the effect that so-called fringe benefits were a subject for negotiation between the employer and employee and could be granted in lieu of increases in wages. Today more than 11,000,000 workers have medical fringe benefits, for which employers pay over \$250,000,000.³ This trend is increasing so rapidly that today's figures are out of date tomorrow.

3. Voluntary Prepaid Medical Care Plans

Another phenomenon whose effect on medicine we now view with surprise is the unprecedented popularity of various forms of prepaid medical and hospital care insurance plans. Today well over 100,000,000 persons in this country have voluntarily purchased some sort of protection of this kind. In 1936 fewer than 10,000,000 people were so protected.⁴ This trend reflects in part the effectiveness of organized medicine in pointing out the dangers and fallacies of medical care paid for and regulated by the government. Little did we think 20 years ago that in 1956 many physicians would receive 60 per cent of their fees not directly from their patients but from a third party insuring patients. Yet physicians in various parts of the country report this to be the case today. This is not to say that all the 100,000,000 people so insured (voluntarily) have sufficient or adequate protection. Nor is it to say that all are satisfied with the protection that they now have. There is, however, every indication that more and more of this kind of insurance will be sold through Blue Cross, Blue Shield or the commercial insurance companies, or by groups of physicians specializing in this field.

Medical care insurance is relatively new for many of the older and larger insurance companies, and many of them are feeling their way to see precisely what the public wants, what the physicians want, and how they can best satisfy the growing market

with plans that are actuarially sound. It was physician-sponsored plans, such as Blue Cross, Blue Shield and our own California Physicians' Service that pioneered the way. Their service and their experience have been invaluable and will continue to be so. The other day one of my colleagues in New York was decrying the fact that the commercial insurance companies delayed entering the field in any volume until Blue Cross and Blue Shield were well on the way. To this a past president of a New York medical society replied, "But you must remember, Doctor, it is the reason the rabbit kept ahead of the hound: The rabbit was running for his life, while the hound was only running for his dinner. We in medicine were the scared rabbit. The race has been salutary because it has resulted in a firm bulwark against government control of the practice of medicine."

As I talk with practicing physicians in various parts of the country, I find them aware that these voluntary prepayment plans, imperfect as some may be, must be made to succeed, for if they do not, the government will take over. They are also aware that the practicing physicians of the country can make or break any kind of prepaid medical care insurance. They will make it successful if their charges are based upon the usual standards, irrespective of the existence of insurance; if they will assume their proper role of responsibility in filling out reports and certifying only to disability that truly exists; and if they will render only services that are needed according to the commonly accepted standards of good medical practice. Likewise, the insurance companies, with Blue Cross and Blue Shield, must learn how to simplify the physician's task and how to provide what the public wants at a price it can afford.

4. Awakening of Industry

Another major sociological phenomenon accounting for our present situation missed the attention of many of us. It also occurred in 1949 when the steel industry board said publicly: "We think that all industry, in the absence of adequate government programs, owes an obligation to the workers to provide for maintenance of the human body in the form of medical and similar benefits, and full depreciation in the form of old age retirement—in the same way as it does now for plant and machinery. This obligation is one which should be fulfilled by enlightened business management, not when everything else has been taken care of, but as one of the fixed costs of doing business, one of the first charges before profits." As the full significance of this profound statement has gradually permeated industry, it has brought about the increasing demand for medical service to which I have alluded.

To borrow a word from *The King and I*, we face many "puzzlements" in this area for which we might have been better prepared had we known what was coming. One of the most important is the dearth of well qualified and specially trained physicians willing to devote their careers to industrial or occupational medicine.

Another "puzzlement" is the indifferent attitude on the part of many industries that have been pushed by competition or bargaining into a medical program, the exact nature of which they do not understand.

Still another problem is the fact that in medical school students are given precious little training or even orientation in occupational medicine.

Another problem until recently was the lack of provision for postgraduate specialization in occupational medicine.

Perhaps the most puzzling problem has been the fact that 90 per cent of the employers of this country and nearly 80 per cent of the workers are in establishments where there are fewer than 500 on the payroll—too few to justify the employment of a full-time, specialized medical director. Thus some 45,000,000 workers must depend upon a local physician who gives only a part of his time to the problem for whatever occupational health guidance they get.

Lastly, industry is literally swamped with medical research problems crying for solution. I refer to these in more detail elsewhere.⁶ Suffice it to say here that the human race has never been surrounded by so many man-made hazards. They range from speed and mechanization through potentially toxic new products and by-products; from insecticides to food adulterants; from unprecedented pollution of our air and streams to the products and by-products of nuclear fission. It is to the everlasting credit of physicians and industrial hygiene engineers that this enormous array of man-made environmental hazards has thus far brought about no serious increase in mortality. The impact of these physical agents on man's physiology and the enormous related problems of mental and emotional stresses constitute a series of medical research problems whose solution is essential to man's survival.

I have no doubt that these problems can be solved when we set our minds to it. Indeed, there is evidence that many of them are on their way to solution.

SOME SOLUTIONS

The best training institutions, of which there are already seven or eight in this country, report an increasing enrollment of both medical students and engineers who wish to pursue careers in occupa-

tional health. The type and duration of the training needed are being worked out to the satisfaction of the Council on Medical Education and Hospitals of the American Medical Association. Great impetus has been given to the solution of this problem by the recent recognition by the Advisory Board on Medical Specialties and the Council on Medical Education and Hospitals of the fact that industrial or occupational medicine is not only a specialty within medicine but is respectable. The American Board of Preventive Medicine is now considering more than 700 applications of physicians in this country who wish to be certified as specialists in that field. They are preparing an examination and a list of those considered eligible to take it. The first examination will probably be offered next year and at least annually thereafter. Successful applicants will receive certificates attesting their special competence in the field of industrial medicine. This one development alone serves to break the bottleneck which has been impeding progress these many years. Thus, physicians will understand better what specialization in industrial medicine means, and industry will understand better what it may expect from qualified industrial physicians.

Too many industrial concerns still have little idea of what to expect from their medical advisor or what he may expect from them. There are those who think they can hire a physician as they would an unskilled laborer—the employer specifying the wage to be paid and the work to be done. A physician accepting even part-time employment under these conditions is foolish. This situation will be remedied in time, as we hear more and more captains of industry express themselves as did Mr. H. W. Anderson, vice-president of General Motors, at a recent meeting: "The evolution and development of our own health maintenance program is in itself a tribute to the fine work performed by our staff of some 160 industrial physicians. They have established themselves and the importance of their function through the countless evidences they have provided in terms of service to employees and in the value of their counsel to management."¹

Better orientation of the medical student is on its way. A recent conference in Kansas City of professors of preventive medicine and medical leaders in industry focused attention on the importance of preparing young physicians for the fact that within their first ten years in practice over half of them will have had some connection with industry.

The problem of the smaller industrial concern is perhaps our most difficult one, but it is not an impossible one to solve. If medical students are properly oriented, those who develop a natural interest in the services they can render industry will

contribute greatly to the solution. They do not have to become specialists any more than they need specialize in ophthalmology to prescribe for the commoner kinds of eye disease. Most physicians now practicing had professors of ophthalmology who taught them the newest and best methods of treating the commoner types of eye disorders and, most important, taught them to recognize the serious eye disease which needed a specialist's attention and to refer the patient quickly. Precisely the same thing happens in industry with the part-time local physician. He can, with proper natural interest and self-education, take care of a great majority of the medical problems in industry. Above all, he will learn to recognize those which require prompt reference to a qualified specialist. He does not need to be an expert toxicologist if he can recognize a toxicological problem and quickly locate an expert consultant. Most state departments of health in states where industry is concentrated have consultants available on short notice. Many university medical schools and engineering schools have consultants readily available. Many highly qualified medical experts in this field confine their practice to consultations with industry and its medical directors.

So I have no slightest doubt that these "puzzlements" which face both us and industry today can be solved. They need to be solved as quickly as possible, and the speed with which they are solved will depend upon our recognizing and defining the problems accurately, and then working together among ourselves and with industry toward their solution.

SPECIFIC TASKS FOR ORGANIZED MEDICINE

Specifically, there are two important obligations on organized medicine at the national level and, where there is industrial concentration, at state and local levels. The first is the provision of a strong and competent committee or council whose members are especially interested in occupational medicine and who have some competence therein. Under the banner of a state or local medical society they should make themselves known to management and labor alike, offer to advise with them on medical problems and to mediate their disagreements on medical questions, and to help them attain our common goal. To some of the more conservative members of medical societies this may seem a strange role for us to assume—almost like advertising our wares. So long as it is done under the aegis of the state or county society, there is nothing unethical about it, and it fits in very well with what our public relations department of the American Medical Association and our Council on Industrial

Health have been advocating.² Many will recall that it was our fellow member, Dr. John Cline, who, as President-elect and later President of the American Medical Association, got us off to a good start with our public relations. Heroic problems call for heroic measures. The proper functioning of such a council or committee, under wise and even at times slightly aggressive leadership, will go a long way to forestall intolerable conditions from which we cannot later extricate ourselves.

This council or committee should be in constant touch with labor unions and with various management groups, such as the chambers of commerce, local branches of the National Association of Manufacturers, branches of the American Management Association, and various trade associations—for instance, those in oil, construction, mining, manufacture, and finance. It should have at its disposal a list of available, interested physicians, competent to do at least part-time work in industry. This committee should not hesitate to make clear to an industry its need for medical skills, what to expect of its medical advisor and his staff, and what the medical director will expect from the industry.

The second obligation rests largely on the shoulders of the committee or council mentioned above, although it remains the responsibility of the state society to cultivate at least a receptive attitude on the part of all its members. There is no reason for serious differences between the physician practicing good industrial medicine and his colleagues in other types of practice. Differences usually arise from misunderstanding.

The state committee or council on industrial health should take responsibility for helping members who are interested to learn more about the medical problems peculiar to occupational health. These include medical administration in industry, toxicology, preventive medicine to safeguard the health and safety of the worker, cooperation with management and unions in job placement, and opportunities for much-needed research in industrial medicine. The state council on industrial health can be most helpful by organizing short courses for physicians, publishing informative articles in professional journals, abstracting useful articles of common interest from the specialist journals, and arranging repeatedly and in all parts of the state discussion groups among management and labor and medicine to consider common problems. This is the essence of the program of the Council on Industrial Health of the American Medical Association. Its work is greatly facilitated by having a counterpart in state societies.

I look hopefully for the time in the not-too-distant future when each practicing physician, specialist

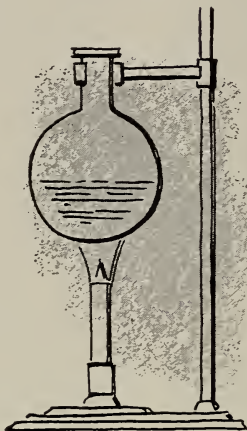
and general practitioner alike, will have learned to be alert to the health problems involving occupation, will think twice or at least seek consultation before attributing a given ailment to occupation, will show appreciative respect for the opportunities for sound preventive medicine offered in industrial surroundings, and for the physician who devotes his specialized medical career to industrial medicine. When that time comes, the industrial physician, be he part-time or full-time in that field, will be a respected colleague and consultant who can be helpful to the attending physician in arranging work modifications upon return from illness, relieving stresses and hazards connected with occupation, often assisting with diagnosis by providing the medical aspects of the patient's work history, and helping all of organized medicine to uphold the unique values of the practice

of medicine under the freedoms which we enjoy in this country today.

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Trifluoroethylvinyl Ether (Fluoromar®)

A Preliminary Report on Clinical Experience and Animal Experiment

WILLIAM H. L. DORNETTE, M.D., Los Angeles

MANY YEARS have elapsed since the first report of surgical anesthesia with ether appeared in the literature¹ and in that time a continuing search has been made for a perfect anesthetic agent. Some (cyclopropane, trichloroethylene) have become valuable additions to the anesthetic armamentarium. Others (chloroform, ethyl chloride), although widely used for a time, have gradually fallen into disuse owing to toxic side effects. Still other compounds, ethyl vinyl ether (Vinamar®) for one, have been introduced so recently that their exact value to anesthesiologists is not yet known.

A serious drawback to most inhalation anesthetic agents is inflammability. In an attempt to produce a noninflammable inhalation agent, chemists of Ohio Chemical & Surgical Equipment Company experimented with various halogenated ethers. They found that as the number of halogen atoms in a compound increased, inflammability decreased, but after a time, so did potency. Fluoromar® (trifluoroethylvinyl ether) is a product of this experimental work. Trifluorination of the ethyl radical of the ether significantly raised the lower limit of inflammability, thereby making the compound less inflammable and very difficult or impossible to ignite in concentrations within the anesthetic range.

PHYSICAL PROPERTIES

Fluoromar is a clear colorless liquid with an almost sweet and not unpleasant odor. The faint purple fluorescence on exposure to daylight is produced by a stabilizing agent, 0.1 per cent phenyl alpha naphthylamine. Fluoromar is stored in dark brown bottles. However, it appears stable during protracted storage even if exposed to sunlight. The vapor does not react with hot sodalime, and it has been impossible to demonstrate breakdown of the molecule in experiments on animals. Nor is there any evidence that such a breakdown occurs in man. Table 1 lists some of the physical characteristics of Fluoromar as compared to diethyl and ethyl vinyl ethers.

Presented before the Section on Anesthesiology at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

This study was supported by a grant from the Ohio Chemical and Surgical Equipment Company, Madison, Wisconsin.

From the Division of Anesthesia, University of California Medical Center at Los Angeles, Los Angeles 24.

- In observations of 80 cases in which Fluoromar was used for inhalation anesthesia it was noted that induction was rapid; maintenance although labile, was usually smooth; and recovery of reflexes was rapid. Anesthetic complications were minimal, and postanesthetic complications were limited to nausea and vomiting in no greater incidence than that expected to follow the use of most inhalation anesthetic agents.

Fluoromar produces rapid, and not particularly unpleasant, loss of consciousness, and will produce complete anesthesia without supplement. However, the muscular relaxation afforded by Fluoromar is not complete, and delayed recovery from anesthesia may follow attempts to produce relaxation by deepening too greatly the level of anesthesia.

The inflammability of Fluoromar is less than that of other inhalation agents.

CLINICAL TRIAL

At the time this report was written Fluoromar had been used for anesthesia in some 90 cases at this hospital. The report is based on data from 80 unselected cases. Fluoromar was the primary anesthetic agent in all of them (Table 2).

There were 44 male patients and 36 female. Most of them were in the pediatric age group (Table 3). Most were adjudged to be of physical state* one or two.⁶ There were no patients of physical states four, six or seven in this series. Operative procedures included the usual ones carried out in a general hospital.

ANESTHETIC ADMINISTRATION

Preliminary medication consisted of a belladonna drug administered intramuscularly, alone or in combination with morphine or meperidine, one hour before induction of anesthesia.

Fluoromar was administered as one would administer any volatile liquid agent, on the open mask and in the ether vaporizer of a gas anesthesia apparatus. Early in the series it was noted that Fluoromar, possibly because of its relatively high boiling point (42.7° C.), was difficult to administer smoothly by the open technique. Hence, in the

*Gradients of physical state: 1—Good condition, elective procedure; 2—Fair condition, elective procedure; 3—Poor condition, elective procedure; 4—Bad condition, elective procedure; 5—Good condition, emergency procedure; 6—Poor condition, emergency procedure; 7—Moribund.

TABLE 1.—Physical Characteristics of Three Ethers.

Agent.....	Trifluoroethyl- vinyl ether	Ethyl vinyl ether	Diethyl ether
Trade name.....	Fluoromar	Vinamar	
Molecular weight.....	126	72.1	74.12
Boiling point degrees centigrade.....	42.7	35.8	34.6
Vapor tension, mm. mercury at 25° C.....	360	520	540
Density of vapor (Air = 1).....	4.4	2.5	2.6
Lower limit of inflammability, per cent in oxygen.....	4.0	2.2	2.0
Oil/water coefficient at 37° C.....	91	45	3.2

TABLE 2.—Secondary Anesthetic Agent Used with Fluoromar.

Agent	Number of Times Used
None	13
Nitrous oxide	51
Surital intravenously	8
Surital rectally	5
Diethyl ether	3

TABLE 3.—Age of Patients.

Age (Year)	Number of Patients
Less than 1.....	7
1 to 9.....	37
10 to 19.....	9
20 to 29.....	7
30 to 39.....	5
40 to 49.....	7
50 to 59.....	3
60 to 69.....	5
70+	0

TABLE 4.—Duration of Anesthesia.

Less than 15 min.....	3
15 to 30 min.....	10
30 min. to 1 hour.....	2
1 to 1½ hours.....	22
1½ to 2 hours.....	24
2 to 3 hours.....	14
3 to 4 hours.....	4
4 to 5 hours.....	1

TABLE 5.—Recovery of Reflexes in Operating Room.

Reflexes present, no complications.....	57
Retch	6
Emesis during recovery.....	9
Moderate excitement	1
No reflexes present.....	7

TABLE 6.—Postoperative Complications.

None	59
Emesis during recovery.....	9
Emesis operative day.....	6
Emesis first 24 hours.....	2
Emesis longer than 24 hours.....	1
Minor complications, miscellaneous.....	3

majority of cases (68) administration was by circle absorption technique.

The onset of action of Fluoromar anesthesia is extremely rapid. Because of the odor of the agent, or lack of it, induction is usually not unpleasant, and the patient loses consciousness quickly. Recovery from anesthesia is likewise usually quite rapid.

Relaxation, even in deeper planes of Fluoromar anesthesia, is only partial. The extremities are usually well relaxed and reductions of fractures and dislocations may be accomplished with ease, especially in pediatric patients, and relaxation of the abdominal muscles in the younger patients is sufficient for repair of hernia, for appendectomy and the like. However, relaxation of the mandible for laryngoscopic procedures is difficult to attain, and muscle relaxants given intravenously are preferable in such cases.

Anesthesia was continued for as short a time as 15 minutes in some cases to as long as five hours in one case (Table 4). Operative complications included emesis during induction in four cases and during maintenance in four; laryngospasm, two cases; overdose of anesthetic agent, one case; difficult but atraumatic intubation, one case.

POSTANESTHESIA COMPLICATIONS

Recovery from Fluoromar anesthesia is usually extremely rapid, even though anesthesia may have been maintained for several hours. However, if attempt was made to produce deep anesthesia, patients seemed to take much longer to recover reflexes and full consciousness, and the incidence of nausea and vomiting was higher.

Data on the recovery of reflexes in the operating room is given in Table 5. Postanesthetic complications are shown in Table 6. Thirty per cent of patients vomited after Fluoromar anesthesia. However, only three of them had severe emesis—longer than the first 12 hours after operation.

LABORATORY STUDIES

Hepatic damage has been reported following anesthesia with divinyl ether.^{3,4,5} Since Fluoromar is chemically related to divinyl ether, animal studies were undertaken to determine whether a toxicologic

relationship existed. These studies were similar to those employed to evaluate ethyl vinyl ether.²

Six mongrel dogs weighing 6 to 15 kilograms each, were subjected to deep Fluoromar anesthesia of one hour's duration once a week for eight weeks. To preclude excessive salivation, the dogs were given 0.1 mg. of atropine per kilogram of body weight intramuscularly one hour before induction of anesthesia. Induction and maintenance of anesthesia were by the open technique, and oxygen insufflation under the mask and endotracheal technique were employed to assure adequate oxygenation. A biopsy specimen was taken from the liver by laparotomy during the initial anesthetic. At the end of eight weeks the dogs were sacrificed and specimens were taken from the liver, lungs, heart and kidneys. Microscopic sections were prepared with hematoxylin-eosin stain. No pathologic change was observed and it was concluded that repeated deep anesthesia with Fluoromar will not produce anatomic hepatic change in dogs.

Clinical studies with liver function tests before and after Fluoromar anesthesia are in progress to determine whether or not there is toxic effect on the liver in humans.

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Evaluation of Grip Loss

A Factor of Permanent Partial Disability in California: Summation and Conclusions of the Subcommittee for Study of Grasping Power of the Committee on Industrial Health and Rehabilitation of the California Medical Association

JOHN E. KIRKPATRICK, M.D., San Francisco

UPON REVIEW of the medical literature on injuries of the hand, it was noted that scarcely a line has been written concerning the problem of evaluation of loss of grasping power. The only complete report that has been published to date on this subject is a paper by Barritt.² The only other reference found in the recent literature on the use of an instrument for measuring grasping power is the report of the Subcommittee for Standardization of Joint Measurements in Industrial Injury Cases contained in a book titled "Evaluation of Industrial Disability" which was compiled by Thurber.⁴ In this book a pneumatic dynamometer is mentioned, a picture of the Geckeler dynamometer is shown, and the subject concerning grasping power is briefly discussed.

At present there are only three types of instruments available to determine comparative loss of grasping power between the injured and normal hand. The Geckeler dynamometer is a pneumatic instrument which depends upon the compression of a column of air by means of a conventional rubber bulb, such as is used on a blood pressure cuff, to propel air into a gauge which registers the increase in air pressure produced by pinching the bulb. At one time there was an idea that a blood pressure cuff could be rolled up and inflated and that a comparative determination of grip could be obtained by having the patient squeeze the partially inflated cuff. It was found that differences in basal starting pressures could produce almost any kind of reading, and that bounce by a quick jerk could squirt the mercury or dial hand through its entire range and give completely abnormal and improper readings. Barritt stated that the use of the blood pressure cuff in the taking of grip measurements was not acceptable.

The Collins dynamometer, sometimes called the Misdom-Frank, is an oval spring device which depends entirely on compression of a steel spring registering the amount of compression of the spring

• Loss of grasping power is a ratable factor of permanent partial disability by the Industrial Accident Commission of the State of California. The ratings that issue therefrom are based upon the proportion of grasping power actually lost as a result of the injury sustained. The conditions which most frequently impair grasping power are, (1) amputation; (2) limited motion of digits, wrists, forearm, elbow or shoulder; (3) pain; (4) muscular weakness. The examining physician can greatly facilitate proper rating if he carefully and fully reports data needed by the I.A.C. Grip readings should be measured by the most precise instrument which can be obtained. Makeshift devices such as using a blood pressure cuff are not acceptable. A committee of the California Medical Association appointed to study the subject of loss of grip for purposes of establishing compensation rating, concluded that a dynamometer that registers pounds force is preferable to one registering pressure.

through gears which activate a pointer on a dial. The oval spring on this type of dynamometer is not made with uniform or calibrated resistance and consequently a wide variation in comparative figures can be obtained with different instruments, no two being alike in so far as resistance is concerned. Some of the instruments have a spring so weak that the comparative result is of no practical value because it offers so little stimulus to the grasping effort, and in some the spring is so strong that the resistance causes the patient to balk at applying his best efforts. Another fault frequently encountered is that the edge of the spring gouges into the soft tissue of the hand to the extent that it causes pain even in an uninjured hand, which keeps the patient from gripping his best. Some investigators have padded the spring with sponge rubber, which has helped to reduce the gouging effect.

The third type of dynamometer uses a sealed hydraulic system which registers force in pounds.

Sanderson³ described quite correctly the difference between measuring grip pressure and grip force as follows:

"It is important to emphasize that force and

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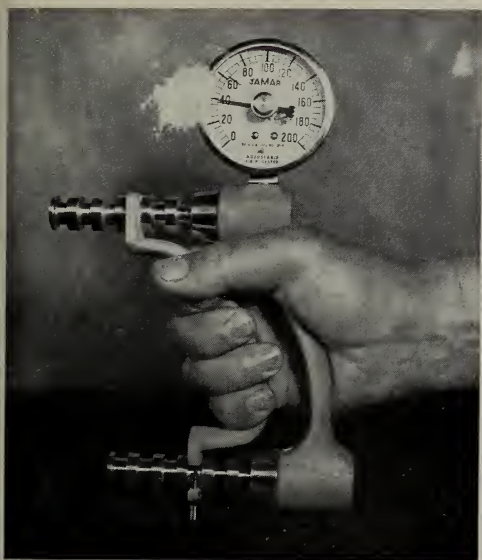


Figure 1.—Jamar dynamometer.

pressure are two widely different physical items. Pressure is the measure of an intensity of force over an area. The wide difference between force and pressure is well illustrated by the simple experience of standing on the floor on one foot, then stepping on a marble, and finally, for extreme emphasis, upon the point of an upwardly protruding nail. Exactly the same force is involved in each case. The weight is the weight of the stepper. In the first case the weight is supported by the area of contact with the entire foot and the pressure is approximately 60 pounds per square inch depending upon the weight of the stepper and the size of his foot. The pressure in the case of stepping upon a half-inch marble is approximately 760 pounds per square inch for a man weighing 150 pounds. The same man stepping on a moderately pointed nail, the diameter of the point equal to 1/50 of an inch, will feel a pressure of approximately 478,000 pounds per square inch. The latter far exceeds the strength of the tissue and accounts for the failure of said tissue and the penetration of the nail into the foot. The important point to understand is that pressure is force divided by area. In the above illustration the same force was involved in each case but the pressure varied from approximately 60 pounds per square inch to 478,000 pounds per square inch, solely because of the effect of the change in area of contact.

"Precisely, this is the same relationship involved in measuring grip. It is impossible to correctly measure grip by measuring pressure. A small hand

or hand having amputated fingers having a moderate grip would develop a large grip pressure. A large hand, having the same useful grip as far as the ability to perform manual work is concerned, would develop a small grip pressure because the same force is spread over a large area. To employ grip measurement as a mark of ability to perform manual labor is a scientific, objective approach to the quantitative measurement of physical ability. It is important, therefore, that grip force be employed and not grip pressure.

"Devices which measure grip pressure by squeezing a bulb filled with fluid, liquid or air, or one of the common spring dynamometers, can only measure the pressure of grip. Grip can only be measured by a force-measuring instrument.

"An instrument measuring grip must respond to the force of the grip, only. Such an instrument would be properly called a Grip Dynamometer. It must not be influenced by the area of contact between the hand and the instrument. So long as the grip is the same it must show the same reading whether the squeezing hand has one or more fingers missing or whether the hand is large or small. It must show the same reading and the same value of grip upon repeated trials regardless of the person who makes the observation.

"Therefore, the basic physics of grip measurement should be summarized as follows:

"1. Grip is a force.

"2. Grip is not pressure.

"3. The measurement of grip must be in force units such as the pound or the gram."

Five or six years ago Sanderson³ manufactured several instruments of the kind he advocated, and he has persistently tried to perfect them but to date such instruments are not being manufactured in any quantity.

The sealed hydraulic system instrument which this Committee* studied is the (Bechtol) Jamar dynamometer, completely remodeled and perfected to the extent that its sealed hydraulic system is as nearly leakproof as any mechanical appliance can be made (Figure 1). It is equipped with a sensitive gauge which is calibrated in pounds per square inch (pounds force), and there is a recalibrator on the face of the gauge for adjustment if any minor change in the pressure should occur. The handles are effectively shaped to fit the hand, made of aluminum, smoothly sandblasted, for comfort and light weight. When the instrument is grasped, only a small fraction of an inch of motion is required to register the

*The Subcommittee for Study of Grasping Power of the Committee on Industrial Health and Rehabilitation of the California Medical Association.

maximum reading of 200 pounds, an isometric feature.

The original Jamar grip tester was the result of three years of study by an engineer and an anatomist with the counsel of four eminent orthopedic specialists. Recently Asimow¹ reengineered and improved this instrument, retaining the isometric principle and a hydraulic system sealed under vacuum. It is now being manufactured in quantity.

The Council of the California Medical Association in October, 1954, authorized Packard Thurber, Sr., M.D., chairman of the Standing Committee on Industrial practice, to appoint a subcommittee to study and evaluate various grip measuring devices and problems concerning measurement of grasping power. Following are the names of the members of the subcommittee he appointed: John E. Kirkpatrick, M.D., San Francisco, chairman; J. L. Barritt, M.D., San Francisco, medical director of the Industrial Accident Commission, State of California; Paul Beddoe, M.D., medical examiner, Industrial Accident Commission, Los Angeles; and A. W. Hoaglund, M.D., Los Angeles, medical director of Pacific Indemnity Company.

Appointed as advisory members of this subcommittee were: Mr. Eli Welch, San Francisco, supervisor of the Permanent Disability Rating Bureau, Industrial Accident Commission; Mr. Jerry Crowley, permanent disability rating specialist, Industrial Accident Commission, Los Angeles; Packard Thurber, Sr., M.D., Los Angeles, ex-officio member.

The first meeting of this subcommittee was held on December 10, 1954, all members being present. The program of study was outlined and the committee then agreed that several Jamar instruments should be supplied to the medical departments of the Industrial Accident Commission in San Francisco and Los Angeles for trial use by their medical examiners in order to make a study of the comparative value of the several dynamometers in current use for the determination of loss of grasping power. The Council of the California Medical Association on April 3, 1955, appropriated the money to supply several of these instruments.

On June 1, 1955, Mr. S. W. McDonald, chairman of the Industrial Accident Commission, approved a survey study to be made of the different types of dynamometers used in Commission cases by the several physicians in the Medical Bureau—J. L. Barritt, M.D., Paul Beddoe, M.D., Gerald F. Doyle, M.D., Wm. H. Harrison, M.D., George Jones, M.D., Sam Kerlan, M.D., and Ben Sharpton, M.D. They made comparative tests over a period of five months.

The opinion of each of these examiners was studied at the next meeting of the subcommittee

which was held in Los Angeles on December 2, 1955. The entire subcommittee was present. Also, Jerome Shilling, M.D., chairman of the Committee on Industrial Health and Rehabilitation of the California Medical Association, was present in an advisory capacity. H. C. Sanderson, M.D., a member of this committee, could not attend. At this meeting it was decided to put the conclusions of the subcommittee into the form of an instructive article on the evaluation of grip loss.

The next meeting of the subcommittee was held on February 10, 1956, in Los Angeles. All members and advisory members were present. An outline of the paper that had been recommended at the preceding meeting was presented. Drs. Barritt, Beddoe and Thurber and Messrs. Welch and Crowley collaborated and contributed to the article outlining the evaluation of grip loss.

The information which the committee felt should be distributed to the members of the California Medical Association in pamphlet form is as follows:

EVALUATION OF GRIP LOSS IN CALIFORNIA

Loss of grasping power is a ratable factor of permanent disability in California. The Industrial Accident Commission desires that dynamometer readings of both hands be given in all examinations of an upper extremity made for rating purposes.

Ratings are based on the percentage of grasping power actually lost as a result of the injury being reported upon. In estimating this percentage the uninjured opposite hand is used as a basis for comparison. In most persons, however, the grip in the major hand is stronger than that in the minor. The Industrial Accident Commission has assumed for reasons of expediency, that the grip is 10 per cent greater in the major hand.

The determination of grip loss based on dynamometer readings is made as follows:

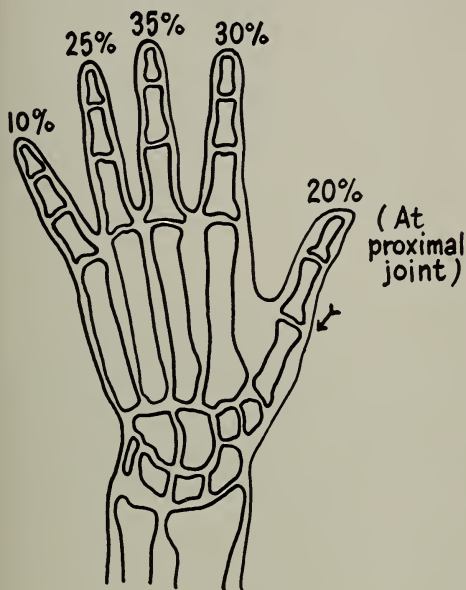
Example:	Injured Major	Uninjured Minor
Average of 3 dynamometer readings 70		100
	(10% greater in major)	
	Add	10
	Estimated normal ..	110
	Major actual grip....	70
	Loss	40
40/110		
(Gives 36% grip loss in major hand.)		

The factors which most frequently result in loss of grasping power are: (1) Amputation, (2) limited motion of hand, wrist, elbow or shoulder, (3) pain, (4) muscular weakness.

A careful evaluation of these factors will usually

ESTIMATED APPROXIMATE PERCENTAGE OF GRIP LOSS DUE TO AMPUTATION

FOR LOSS OF ENTIRE FINGER



FOR PARTIAL LOSS OF ANY FINGER

approximate loss at:

middle joint-
3/4 of value of finger

distal joint-
1/5 of value of finger

Figure 2

give the examiner a general idea regarding the grip loss which may be expected. It would be an extremely rare case in which only one factor contributed to grip loss, but for purpose of discussion it is assumed that the cause indicated is the sole cause.

1. Grip Loss Resulting from Amputation

Figure 2 illustrates the loss which is approximately that found following amputation alone.

Grip loss in cases of amputation will be increased

if such factors as pain, limited motion, tender stump, scars, incoordination and muscular weakness are associated.

2. Grip Loss Resulting from Limited Hand Motion

Evaluation is best made by considering the distance which the fingertips miss the mid palm in flexion. This distance should be reported in all hand injuries, preferably on the standard form supplied for the purpose by the Industrial Accident Commission (see example, page 318).

It is impossible to estimate grip loss resulting from limited motion with any degree of accuracy. The following are probably rough approximations of grip loss to be considered by the examiner to determine if the case is ready to be rated.

Estimated Approximate Grip Loss Due to Limited Motion

Fingers	Misses Mid Palm Over 2 Inches	Misses Mid Palm 2 Inches	Misses Mid Palm 1 Inch	Misses Mid Palm 1/2 Inch
Index	30%	25%	15%	5%
Middle	35	30	20	5
Ring	25	20	10	5
Little	10	10	5	0

With certain limitations of motion, a person may have a normal grip for large objects and yet have a complete loss of grip for small objects. The dynamometer readings in these cases will depend on the type of dynamometer used to some extent. If a dynamometer is used which has an adjustment mechanism to permit varying the span of the grip, the setting should be the same for each test of both hands and should be stated in understandable terms.

3. Grip Loss Resulting from Pain

In California, grip loss that is a result of pain* is just as ratable as loss due to amputation or other pathologic condition. Grip loss may result from pain in the hand, the wrist, the elbow and even the shoulder. When pain is a factor in grip loss, care should be taken to be sure that the condition is ready for rating. It should be emphasized that in many cases of injury to the hand, rating is decided upon much too early.

4. Grip Loss Resulting from Muscular Weakness

Muscular weakness existing at the time a case is ready for rating is usually associated with atrophy,

*The Industrial Accident Commission has adopted the following recommendations and definitions of subjective disability:

Subjective disability can best be evaluated by: (1) A description of the activity which produces the disability. (2) The duration of the disability. (3) The activities which are precluded and those which can be performed with the disability. (4) The means necessary for relief. The following definitions were developed: (1) A severe pain would preclude the activity precipitating the pain. (2) A moderate pain could be tolerated but would cause marked handicap in the performance of the activity precipitating the pain. (3) A slight pain could be tolerated but would cause some handicap in the performance of the activity precipitating the pain. (4) A minimal pain would constitute an annoyance, but causing no handicap in the performance of the particular activity, would be considered as non-ratable permanent disability.

INDUSTRIAL ACCIDENT COMMISSION ROUTINE UPPER EXTREMITY MEASUREMENTS

Circumference Biceps R. 10" / 10½" Wrist /
Forearm R. 9½" / 10" Hand /
(Inches)

Motions: inj./uninj.(*)

Shoulder: Abd. /
Flex. /
I R. /
E R. /
Ext. /
Add. /

Forearm Pron. /
Sup. /

Wrist D F /
P F /
R D /
U D /

Elbow: Ext. /
Flex. /

Hand: - - R. Major

		Proximal	Middle	Distal			
Thumb	(Ext		XXXXXXXXXX		Finger tips miss palm: inches		
	(Flex		XXXXXXXXXX				
Index	(Ext		R. 170/180	R. 165/180			
	(Flex		R. 90/110	R. 40/70	1½"	1"	¾"
Middle	(Ext						
	(Flex						
Ring	(Ext						
	(Flex						
Little	(Ext						
	(Flex						

Thumb: (Abd. / (degrees)
(Add. Tip misses head of 5th MC. / inch

Grip (dynamometer readings)

	Inj.	Uninj.
	96	105
	92	95
	94	100
Average	94	100

Grip loss 16/110 = 15% grip loss.

* In case of bilateral disability state estimated normal as Abd. 140/160 (estimated normal 180).

MEASUREMENTS NOT SHOWN ARE CONSIDERED NORMAL

Key to abbreviations:	
Abd.	= Abduction
Flex.	= Flexion
I R.	= Internal rotation
E R.	= External rotation
Ext.	= Extension
Add.	= Adduction
Pron.	= Pronation
Sup.	= Supination
D F.	= Dorsal flexion
P F.	= Palmar flexion
R D.	= Radial deviation
U D.	= Ulnar deviation
MC.	= Metacarpal
inj.	= Injured
uninj.	= Uninjured

and measurements of girth of arm and forearm of both injured and uninjured extremities are necessary in every rating report. Most persons doing active work have a greater girth on the major side. This difference in girth may vary from none at all in the case of frail female clerical workers, to $\frac{7}{8}$ of an inch in husky males in certain trades. Equal bilateral measurements of girth in active persons usually indicates atrophy of the major side. A small decrease in girth on the minor side usually does not mean atrophy.

5. Grip Loss from Weakened Extensor Mechanism

It should be borne in mind that before an adequate grip can be made, there must be a preliminary fixation of the extensor muscles. Without this preliminary fixation, there can be no normal grip. This is a not infrequent cause of grip loss following tenosynovitis and following certain injuries to muscles and nerves.

6. Dynamometers

The evaluation of grip loss is a medical problem involving many factors. The dynamometer is only one of the methods by which grip loss is evaluated. There is at present no type of dynamometer which will show exactly what the grip loss is.

Grip readings taken by means of a sphygmomanometer cuff or bag are believed to be very inaccurate and are not acceptable to the Industrial Accident Commission.

Two subcommittees under the sponsorship of the California Medical Association have studied the dynamometer problem. No machine has as yet proved to be entirely satisfactory. At present the Jamar* dynamometer (Figure 1) is being studied. Preliminary tests have shown it to be apparently a very good machine. The machine certainly warrants further study and may prove to be the most satisfactory of any available thus far for general use.

Any dynamometer must be used with intelligence. Some of the factors which may make dynamometer readings invalid are:

1. Preexisting injury to the extremity being examined.
2. Preexisting injury to the opposite extremity, making it unsuitable for grip comparison.
3. Failure of the patient to cooperate or to put forth his best efforts.
4. Confusion as to which is the major hand.
5. Inadequacy of the dynamometer itself.

7. Reporting Grip Loss

Premature attempts to establish a rating for any injury cause inconvenience to the employee, the

employer and the Industrial Accident Commission.

Physicians reporting on upper extremity industrial injuries can do much to prevent financial hardship to the injured workman and the employer by giving careful attention to the matter of grip. The importance of this will be realized when it is noted that complete grip loss in the major hand of a carpenter 60 years of age amounts to a pecuniary consideration of \$7,560.

If the examiner feels that the grip loss as shown by the dynamometer reading does not indicate the actual grip loss due to injury, he should so state. He should in addition give his own estimate, *in percentage*, of what he feels the actual grip loss is. (Refer to items 1 and 2 of this report.) He should state the reasons for his opinion.

The examiner should do this only after a careful evaluation of all the factors which may have caused grip loss. He should substantiate his opinion with complete measurements of both upper extremities. He should describe the original injury, if he has not already done so, as well as the course and duration of treatment and the end result.

Such statements as, "The knuckles do not blanch," and "The forearm muscles do not tighten," are not given much consideration. If there is no ability to grip, then blanching and tightening can hardly be expected to be present. On the other hand any one can simulate tremendous effort without making any actual grip.

The following should be reported in every upper extremity examination, made for rating purposes:

1. Dynamometer readings of injured and uninjured sides.
2. Girth in inches of both arms and both forearms.
3. Complete comparative measurements of each joint of the extremity, unless it can be stated that measurement has shown the joint range to be equal to the opposite normal.
4. Distance in inches which the finger tips miss the midpalm.
5. A description of any preexisting grip loss of the injured extremity.
6. A description of any preexisting grip loss of the opposite extremity, together with the examiners estimate of what the normal grip should be. (Refer to items 1 and 2.)
7. A statement regarding which is the major hand.

The upper extremity form[†] has been found by the Commission to facilitate the reporting and rating

*The Jamar dynamometer may be purchased from Asimow Engineering Company, 12505 Sarah Street, North Hollywood, California.

†The upper extremity Form M-35A can be obtained from the Industrial Accident Commission, San Francisco, by request to Dr. J. L. Barritt, Medical Director.

of upper extremity disabilities. In addition it saves the examining physician's time during the examination and when reporting his findings.

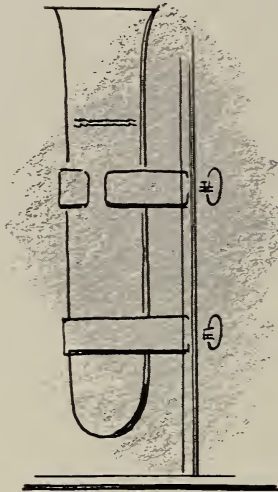
In conclusion, this Committee unanimously agreed that the physical principle of the pounds force type of dynamometer is more acceptable than the principle of the pressure types of dynamometers for the quantitative measurement of grasping power; and furthermore, this committee unanimously agreed to recommend the new Jamar dynamometer as the most acceptable instrument manufactured at this time, bearing in mind that with progress in engineering some better method or instrument may be

developed to more accurately study comparative grasping power.

516 Sutter Street, San Francisco 2.

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3. Sanderson, H. C.: Personal communication, Dec. 1954.
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Surgical Repair of Corneal Injury

ORWYN H. ELLIS, M.D., Los Angeles

IN ALL CASES of injury to the cornea it is most important to have a careful, complete history. This must include exactly what the patient was doing when the injury occurred. Next the first aid and subsequent treatment must be evaluated. It is important to know if anything was removed from the eye and if there is anything in the history to indicate the possibility of a deep or penetrating injury or the presence of an intraocular foreign body. An x-ray examination is often indicated from the history alone.

In the examination, before any fluid is instilled or anything removed, the vision of each eye separately must be determined and recorded. In cases of painful injuries the lids must be held open and the vision determined. The examination is then completed in minute detail.

Deep nonpenetrating wounds of the cornea are of two types, tangential and flap (Figure 1). If considerable time has elapsed before examination, little can be done except excise the flap, for the tissue is by then already necrotic. For the early cases much can and should be done. Usually the injuries are extensive and the pupillary area is involved. At operation after debridement and irrigation with saline solution, the extent of damage and length of the wound are determined with the spatula. Sutures are then placed, starting in the flap and ending in normal corneal tissue (Figures 2 and 3). The sutures must be placed with extreme care and exactness. If a suture is not well placed, the surgeon should not hesitate to remove it.

Occasionally even under the slit lamp it cannot be definitely determined that a wound extends all the way through the cornea. Usually if the cornea is penetrated, the intraocular tension is lower than normal, but it may not be if the wound is small. Contrariwise, the pressure may be low without penetration, as in some cases of contusion. An aid to diagnosis in doubtful cases is to put a drop of fluorescein in the conjunctival sac. In penetrating wounds, a green color then is seen immediately in the anterior chamber as viewed under the slit lamp.

PENETRATING WOUNDS

All leaking wounds, open and/or perpendicular to the surface of the cornea are dangerous and should

• Operations on the cornea relating to trauma are discussed, and included are tangential flaps, corneal injuries, old adherent leukoma, and optical iridectomy. Variations from the usual technique and the immediate surgical closure of corneal wounds are emphasized.

be closed promptly. The lids have a milking action which results in a loss of aqueous fluid and entrance of conjunctival fluid into the anterior chamber. Severe infection may rapidly follow.

No two penetrating wounds of the cornea are the same. In general, wounds in the periphery heal better than those in the central area. Lacerations in the periphery often extend into the sclera and are nearly always complicated by prolapse of the iris. Wounds involving the sclera are usually the more serious, for the sclera overlies the ciliary body. Such wounds frequently are slow to heal, with the globe remaining soft and low-grade uveitis persisting. In such cases sympathetic disease in the other eye is likely to occur. Penetrating wounds of the center of the cornea are more often leaking; perpendicular ones complicated by lens damage. Such wounds always heal slower than those about the periphery, probably due to the fact that the nutrition of the central cornea is less than that at the periphery; and there is usually considerable visual loss.

OPERATIVE PROCEDURE

For corneal suturing it is of paramount importance to have magnification such as the Zeiss telescopic loupe, to have instruments in good repair and to use fine, sharp needles and thin, strong braided silk. The Griesharbor or Kalt, or Ethicon atraumatic needles with 6-0 braided silk are recommended. Anesthesia must be deep, either local or general, and in either a retrobulbar injection of procaine with epinephrine is recommended. If the wound is extensive, the eyelids are sutured back out of the way. The wound is examined and any foreign substance removed. An iris spatula is inserted and moved gently in the wound to determine the width and depth, and the number of sutures needed is estimated. In general, one corneal suture should be put in for every two to three millimeters of wound length. The sutures are placed before any of the complications are dealt with. In a jagged or angled

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wound one or more single sutures at the apex of the "Y" is required, and the closure may be extremely difficult.

For placing a mattress suture, toothed fixation forceps are used to grasp the edge of the wound a little to one side of the point at which the needle is to enter the cornea (Figure 4). The needle is passed into the cornea about one millimeter from the edge of the wound and nearly perpendicular to it. The tip of the needle emerges in the cut surface. The fixation forceps is then applied to the opposite edge and the needle is passed into the cut surface directly opposite. The tip comes out on the corneal surface one millimeter from the edge of the wound, and the needle is pushed far enough so that two to three millimeters of it extends above the surface. Then, without relaxing the hold on the cornea with the toothed forceps, the tip of the needle is grasped with a needle holder and pulled through (Figure 5). After the needle has been passed well through the second side of the wound, broad fixation forceps may be substituted for the narrow ones used to place the first suture. The broad forceps are placed at the point of emergence of the needle from the cornea. Then, by using slight counter pressure, the needle can be pulled through the cornea as before. The pull must be steady and firm, for jerking it would tend to increase complications. Repeated applications of the forceps are unnecessary.

After the sutures have been placed, attention is given to the complications. In small wounds in which the iris is caught or has adhered to the inner surface of the cornea, it usually can be freed by irrigation or stroked loose with an iris spatula. A few drops of sterile epinephrine in an eye with an open wound will give a rapid, maximal dilatation and may pull the iris free when the pupillary portion is caught in a centrally located laceration. Iris incarceration near the base is freed with the iris spatula and a small peripheral iridectomy is done before the sutures are tied. An air bubble maintains the depth of the anterior chamber (Figure 6).

When the iris is prolapsed, a decision must be made as to whether or not to attempt to replace it. If the wound is only a few hours old, if the prolapse is small, or if the iris has prolapsed with the placement of the sutures, it should be repositioned or irrigated back to its normal position, and then the sutures should be closed and an air bubble put into the anterior chamber.

When the patient is not seen until some time after the wound occurred, the edges of the corneal wound are gray and edematous when first observed, due to the absorption of aqueous fluid, and it is probable the tissues are already infected. Yet the edges should be approximated as in the procedure just described. Prolapse of the iris must be dealt with as in a recent

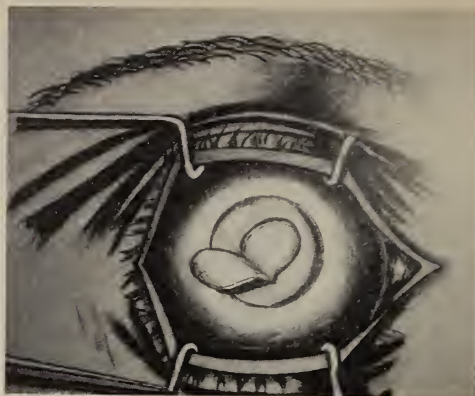


Figure 1.—Large, nonpenetrating flap wound of the cornea.



Figure 2.—Closing large, nonpenetrating flap wound of cornea.

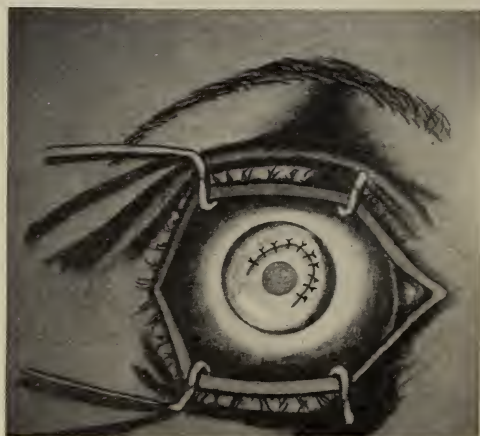


Figure 3.—Closure of large, nonpenetrating flap wound of cornea.

wound, except that in the case of old wounds the iris may never be replaced, but must be excised. After placement of the sutures, the prolapsed portion of the iris is grasped and pulled out slightly. Then, with the scissors flat on the cornea, the necrotic, infected iris is excised. The iris in the eye pulls free of the wound by the elasticity of the tissue. The wound is then closed and the sutures are tied. The anterior chamber is deepened with a bubble of air. After a prolapsed portion of iris has healed in a wound, as in cataract operations, or if a portion has not been completely freed from a penetrating injury, after 24 hours it cannot be freed from the wound by medication.

Air is retained by the anterior chamber better than fluid. The air is absorbed more slowly and keeps the iris and lens more posteriorly placed so that synechia and adhesions do not form in the healing. A purple-tipped glass irrigator is the preferred instrument for introducing air. In all operations in which instruments enter the anterior chamber, whenever possible the point of entrance should be over the iris rather than over the lens, for the iris is less easily damaged.

Should the corneal laceration be extensive with vitreous or a portion of the lens in the wound, the sutures should be preplaced as in the procedures already described. If the lens is not greatly swollen, lens tissue, especially capsule, is cleared from the wound and the sutures closed. In cases of extensive damage to the lens, the sutures are placed but are not tied until as much of the lens as can be removed easily, either directly or by irrigation, is taken from the wound. Prolapsed vitreous, if present, is excised after the sutures are tied. After an air bubble is put in the anterior chamber the iris repositor is used to free the wound. Often the air must be replaced after this procedure. In cases of lens or vitreous prolapse, wide iridectomy is performed. When the lens capsule is opened widely, a cataract extraction is usually necessary in the next two to four days.

If lens material, especially capsule, is allowed to heal in a corneal wound, a fistulous tract usually results, and epithelial downgrowth is likely to occur. If the rent in the lens capsule is small and closes immediately the cataract may remain localized and not spread to include the entire lens.

Vitreous in the wound means that vitreous is in the anterior chamber, with the possibility of secondary glaucoma. Lens dislocation, partial or complete, may be a complication, and bullous keratitis is frequently a late result.

Conjunctival flaps alone to cover corneal wounds are mentioned to be condemned. If the eye is so severely damaged that a conjunctival flap is the only procedure available, then in most cases enucleation

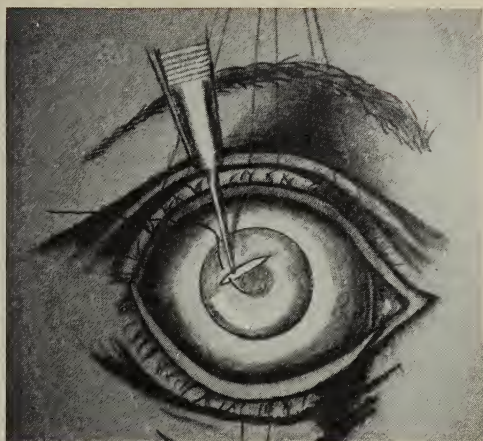


Figure 4.—Wound edge grasped and suture placed.

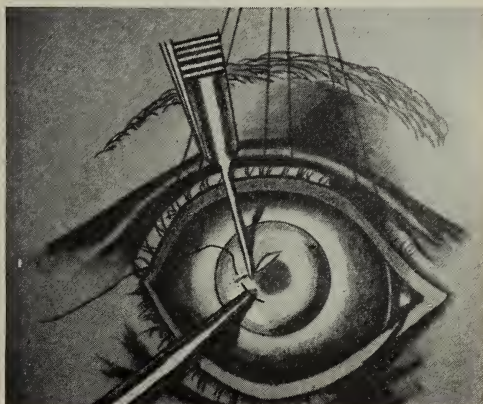


Figure 5.—Maintaining the grasp on the second edge as the needle is pulled through.

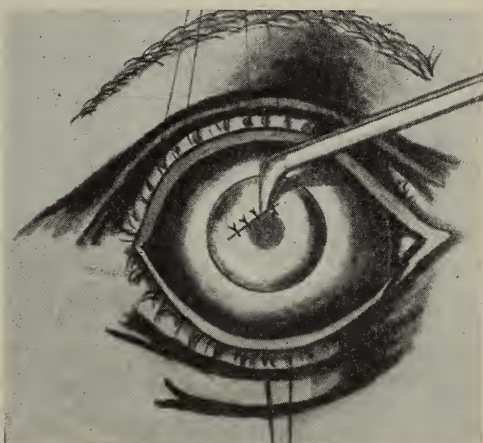


Figure 6.—Air bubble is put into the anterior chamber after sutures are closed.



Figure 7.—Excision of corneal scar.

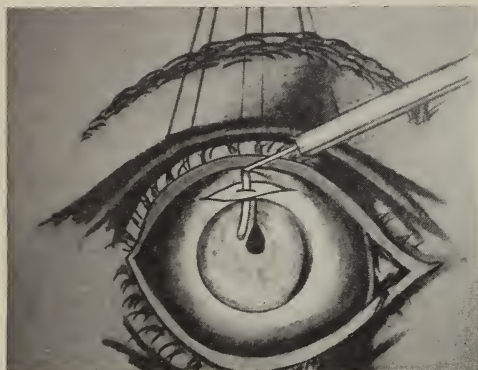


Figure 8.—Freeing of iris in adherent leukoma.

would be the best operation. It has been repeatedly observed in examination of enucleated eyes that corneal wounds covered only with conjunctival flaps heal poorly and that complications are many.

Sometimes, if only a small piece of corneal tissue is missing, it is possible to excise a triangle or triangles of tissue to make the wound linear and then suture it. Usually, however, if there is much loss of tissue the eye is so severely damaged that enucleation should be done.

Some scars of the cornea may remain painful after apparently complete healing has taken place. This may be due to bacteria which remain active in the scar. Cautery or thermophore application to the area usually clears this condition. In the occasional case in which this treatment is not successful, excision of the scar may be necessary. The procedure for doing this is also applicable to cystoid cicatrices, fistula of the cornea and old iris prolapse at the limbus. In this procedure, lid sutures are

required. The area around the scar to be excised is outlined and the incision made about one-half the depth of the cornea with a Bard-Parker knife. Mattress sutures are placed as for corneal wounds (Figure 7). The start is one millimeter from the edge, then out in the cut. The needle then is placed in the cut on the opposite side and is passed through to emerge one millimeter from the edge. As an assistant holds the sutures out of the way, the wound is gradually deepened with short light strokes of the knife held perpendicular to the surface. After the anterior chamber is entered, the excision is completed with Stevens scissors. The pre-placed sutures then are pulled tight and tied, and the anterior chamber is deepened with an air bubble. If the incision is near the limbus a conjunctival flap may be pulled over, but this is not necessary.

In adherent leukoma following penetrating injury, perforated corneal ulcer or corneal transplant, the following surgical procedure is used.¹ A conjunctival flap is raised in the quadrant of the scar and dissected down to the limbus closest to the adherent iris. An assistant retracts the conjunctiva back over the cornea. About 1.5 to 2 millimeters from and parallel to the limbus an incision is made through the sclera with a Bard-Parker knife. After the sclera has been cut through, the incision is enlarged to about 4 millimeters with the tip of the knife. A cyclodialysis spatula is introduced into the wound (Figure 8) and the conjunctiva is pulled toward the fornix so that the cornea is uncovered. The spatula is passed into the anterior chamber and the adhesion is broken by passing the blade between the cornea and the plane of the iris. This is done by a gentle rotation of the handle of the instrument. In this way the iris is actually torn loose from the scar. Often the sphincter is included in the adhesion and an irregular pupil is the end result. An air bubble is injected into the anterior chamber with a Randolph needle on a 2 cc. syringe. Usually no suture is required in the scleral wound and a simple running black-silk suture closes the conjunctiva.

Resection of corneal scars alone without grafting is almost never done since lamellar keratoplasty is only slightly more difficult and excellent results are much more often obtained. An addition to the techniques of either lamellar or full-thickness corneal transplantation is the use of about 15 direct corneal sutures, with preplacement of four sutures before the graft is cut from the donor eye. This can be done after the trephining, but before the graft is completely cut free.

Superficial corneal foreign bodies are all removed and curettage carried out under a slit lamp with deep cocaine anesthesia. If a ring of rust is present it is completely removed at the first visit. Ferrous



Figure 9.—Wide stenopeic slit, one-half occluded.

metals and copper imbedded in the cornea produce severe reactions. Even if they are partly in the anterior chamber, they are removed by enlarging the wound of entrance with a cataract knife and then pulling them out with a magnet, or are grasped with fine, pointed forceps and withdrawn. Cilia, glass and other foreign bodies are removed in the same way.

In some cases of scarring of the pupillary area of the cornea with reduced vision, optical iridectomy has proven of value. The following test is helpful in determining whether the operation will give visual improvement. The pupil is maximally dilated. A wide stenopeic slit, one-half occluded (Figure 9) is put in a trial frame over the patient's eye. This is rotated until the angle is found at which maximum vision is obtained. This is the best

vision that can be expected from complete iridectomy done at this angle.

An infection in a penetrating wound of the cornea is usually primary in the wound itself, as most penetrating foreign bodies are sterile. It is usually best to delay operation for 24 to 48 hours—time for antibiotics given at the time of injury to control the infection. If it is not controlled promptly, then one must weigh the advantages of closure against the probability of causing an exacerbation of the infection. Ring abscesses of the cornea may occur within 24 hours, and infection due to *P. pyocyaneus* is rarely stopped. Except for these two conditions, antibiotic therapy is usually effective and the operation can be successfully performed.

Always to be borne in mind is that every serious eye injury is different from all others. Similar objects traveling at the same speed and striking two globes at the same place may produce two totally different injuries. Thus, in the description of injury, treatment and repair, it must be remembered that what may apply in one case may be entirely wrong in another apparently similar case. The eye that responds poorly is the one from which we learn the most, and the one that tries one's patience, that is the most demanding, may supply an invaluable lesson.

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Urological Problems in the Aged

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DURING 1955, half the patients on the Urology Section at the Los Angeles County General Hospital were more than 60 years of age (Table 1). Only 21 per cent of patients on all services were above 60. The proportion of males who were older than 60 years and who had urological complaints was still higher—60 per cent as against 29 per cent above 60 years of age on all other services. Not so large a proportion of female patients over 60 had urological complaints—27 per cent on the Urology Service and 18 per cent on all services. There was a higher per cent of females over 60 both on the Internal Medicine and on General Surgery services—46 per cent and 30 per cent, respectively.

PROSTATIC DISEASE

The larger proportion of aged persons requiring treatment for urological complaints is due to the prevalence of prostatic disease in older men. Hesitancy in starting the urinary stream, lack of force, frequent urination and dribbling at the end of urination, when they occur in a man past 60 years of age, are usually due to benign prostatic hypertrophy. It is inadvisable, however, to arrive at this diagnosis without making a thorough examination to consider other possibilities. A few months ago a man 65 years of age came to the author's office complaining of the obstructive symptoms noted above. He had seen several physicians previously and had been told that prostatectomy was the only treatment that would help him. Examination revealed an obstruction to the passage of a catheter through the bulbous urethra, and a normal prostate by rectal palpation. The urethral stricture was dilated, the symptoms disappeared, and the patient enjoyed again the pleasure of a free urinary stream without the necessity of surgical operation.

Prostatic carcinoma, nephrosclerosis or diabetes causing nocturnal polyuria, neurogenic vesical dysfunction and sometimes even dehydration are other conditions which must be differentiated from benign enlargement of the prostate.

Palliative Treatment of Prostatic Disease

A positive diagnosis of prostatic hypertrophy does not always mean that prostatectomy is indicated. Seven years ago the author made a study of 310

• The preponderance of men over 60 years of age on the Urology Service at the Los Angeles County General Hospital is due to the prevalence of prostatic disease. Approximately two-thirds of patients with prostatic hypertrophy of Grade I or smaller size and who have less than 60 cc. of residual urine can be treated nonsurgically. Prostatic operation, when done expertly, is well tolerated by most aged patients. The end results are usually good except in those who have complicating central nervous system lesions. The approach chosen for removal of the prostate is determined by the training and experience of the surgeon.

Urinary obstruction due to carcinoma of the prostate can be relieved by hormonal treatment in most cases. Carcinoma of the bladder when discovered early can be controlled for many years by repeated transurethral resection and frequent observation; when discovered late, successful definitive treatment is rarely possible. Vesical dysfunction due to neurological and/or senile changes is best treated by use of an in-dwelling urethral catheter. Mild dysfunction may respond somewhat to medication and sphincter muscle exercise. Infections respond well to anti-infection drugs unless there is an organic urological lesion. Untoward reactions to drugs are more common in aged patients. Calculi, when they are found in the bladder, should be crushed and evacuated; when in the kidney, let alone unless symptoms are annoying. Renal tumors should be removed unless the patient is more than 80 years of age. Elderly patients tolerate urological operation well when it is done expertly.

patients upon whom a diagnosis of benign prostatic hypertrophy had been made and who did not have prostatic operation for a month or longer after the diagnosis was made.¹ In 41 per cent of them, prostatectomy was eventually performed (Table 2). In the group of patients who had residual urine of less than 60 cc., 30 per cent required operation later, whereas in those who had initially more than 60 cc. of residual urine, 62 per cent were operated upon later. A correlation was also made of the size of the prostate and need for eventual operation. Thirty-two per cent of patients with a Grade I or less enlargement had prostatectomy later, and 49 per cent of those with prostatic enlargement of greater than a Grade I required subsequent removal of the gland. Success of palliative treatment was associated with comparatively smaller amounts of residual urine and a smaller sized gland. Patients who have annoying obstructive symptoms, however,

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TABLE 1.—A Comparison of the Per Cent of Patients Over 60 Years of Age on Different Services at the Los Angeles County Hospital During 1955. (Patients Discharged, Including Deaths.)

	Per Cent		
	Male	Female	All Patients
Urology	60	27	50
Internal medicine	50	46	48
General surgery	32	30	31
All services	29	18	21

TABLE 2.—Necessity for eventual Prostatectomy in Patients with Prostatism Who Were Not Operated Upon for One Month or Longer After Diagnosis of Prostatic Hypertrophy.

Criteria Evaluated	Number of Patients	Per Cent Requiring Eventual Prostatectomy
All cases	310	41
Less than 60 cc. residual urine.....	192	33
More than 60 cc. residual urine.....	118	62
Size—Grade I or less.....	136	32
Size—larger than Grade I.....	174	49

should have operation even though the prostate is small and/or the residual urine is less than 60 cc. The bladder muscle may hypertrophy and compensate for the obstruction.

Therefore palliative treatment is usually indicated in most patients who have less than 60 cc. of residual urine and who do not have annoying obstructive symptoms. Prostatic massage at one or two week intervals, and administration of stilbestrol, 1 or 2 milligrams daily, reduces the size of the gland when it is soft and boggy. The patient should not hold the urine very long after he has the desire to void and should avoid becoming chilled. In some patients the drinking of coffee or alcoholic beverages aggravates the symptoms. Frequent catheterization and the passing of sounds is likely to make the patient worse rather than better.

An elderly man with prostatic obstructive disease and in addition some other malady common to the aged, presents a more complicated problem. Heart disease, hypertension, nephrosclerosis and diabetes are frequent coexisting conditions. Most of these diseases will improve sufficiently under treatment to permit prostatic operation to be done successfully. The outlook becomes more gloomy, however, when the complicating lesion is neurogenic. The majority of patients with paralysis agitans, and those who have residual paraplegia from cerebral or cord lesions, are benefited very little by prostatic operation. When they are bedfast most of the time, it is better to treat them by placing an in-dwelling urethral catheter. Following prostatic operation on such patients, it is usually necessary to continue to use an in-dwelling catheter to control incontinence and/or bladder distention due to the central nerve lesion. Even so, prostatic operation may be indicated

in some patients who do not tolerate the in-dwelling catheter. After removal of the gland the catheter is better tolerated. The patient does not notice its presence then, whereas before the operation it may have caused so much irritation and pain that he was unable to stand it.

Indications for Prostatic Operation

Prostatectomy is indicated in most patients who have a residual urine of more than 60 cc. unless the residual is due partially or wholly to a neurological or other lesion. The indication becomes more definite when the prostate is Grade II or larger in size. The exceptions are patients who are too poor surgical risks to stand prostatectomy. Most elderly men who are up and about, who can putter in the garden, and whose spirit is good, tolerate operation well, regardless of adverse objective findings. On the other hand, a man who feels like lying in bed, whose appetite is poor, and who is afraid he will not survive operation, is a poor surgical risk even though the physical examination and laboratory reports are normal.

Approach to Prostatic Operation

When prostatic operation is decided upon, the question often arises as to which approach to prostatectomy is best. The indication for the method by which the prostate is removed is determined more by the training, ability and experience of the surgeon than by any other factor.² The surgeon himself knows better than anyone else which method for him gives the best result. Some surgeons use the transurethral approach for the smaller glands, contractions and bars, and for relief of obstruction due to carcinoma not responding to hormonal therapy. Others use this approach for removal in almost all cases of prostatic obstructive disease, while still others prefer the suprapubic, the retropubic or the perineal approach. Each method gives good results in the majority of cases when the operation is performed properly. The mortality rate is less than 2 per cent, the period of morbidity is short and the end results good. The mortality is a little higher in older patients,⁴ but not enough to contraindicate the procedure unless the patient is a very poor surgical risk.

Prostatic Carcinoma

Carcinoma of the prostate becomes a problem in the aged only after hormonal therapy is no longer effective and in the occasional patient in whom the malignant disease does not respond to this treatment. Orchiectomy combined with small doses of estrogen (stilbestrol, 1 or 2 mg. daily) gives the best results when a positive diagnosis of prostatic carcinoma is made. The malignant lesion melts away and the patient is apparently cured. Estrogens (stilbestrol, 5

mg. three times a day) without orchiectomy is used when there has been no positive microscopic diagnosis of carcinoma. It is dangerous from the medico-legal point of view to remove the testicles unless the diagnosis of malignant disease has been established by positive tests. Urinary obstruction due to carcinoma of the prostate responds to hormonal treatment in the majority of cases. Operation for the relief of the obstruction was necessary in only 8 per cent of cases reported by Mullenix and Prentiss.⁵ After five to ten years of relief the symptoms gradually recur. Backache, weight loss, lassitude and other symptoms do not respond to any treatment except palliative relief of pain.

Vesical Carcinoma

Carcinoma of the bladder, when discovered early in its course, may be controlled for many years. The most common first sign is blood in the urine. This symptom should never be passed over lightly by a physician. Even though the patient is 70 or 80 years old, the source of the bleeding should be determined. A small tumor can be removed by transurethral resection without endangering the patient's life or health. By vigilant follow-up care consisting of cystoscopy every three months, recurrences can be discovered and removed by resection while they are small. However, when the original tumor or recurrences are large when discovered, the treatment is discouraging. It is not possible to do more than a palliative procedure. Radical operation such as cystectomy is not well tolerated and recurrence of neoplasm appears in the subpubic space within a few months.⁵

Vesical Dysfunction

Bladder dysfunction unaccompanied by obstructive prostatic disease is often a real problem in the aged. A lesion of the central nervous system is the most common cause. Patients with cerebral vascular disease, paralysis agitans, with multiple sclerosis and other degenerative diseases of the cord, nearly always have urinary retention or urinary leakage or both. Loss of muscle tone, which so often accompanies old age, may involve the bladder. Senile dementia causes reversion to infant status with resulting uninhibited bladder function.

In rare instances the primary disease may regress with resulting improvement of vesical function. In the majority, however, the lesion is progressive. An in-dwelling urethral catheter, preferably a size 16 or 18 five cc. Foley bag type, is indicated in the majority of aged patients who have urinary retention and/or incontinence due to a central nervous system lesion, to myogenic hypotonia, and to senile dementia. This is especially true when the patient is bed-fast most of the time. The catheter is clamped off

or a small cork inserted into its open end during the day. Allowing the bladder to distend helps prevent contracture and loss of capacity. The patient may also ambulate more easily when the catheter is clamped off. The clamp or cork is removed at three to four hour intervals to evacuate the urine. At night the catheter is connected to a tube draining into a bottle at the side of the bed.

There is no necessity of changing the catheter as long as the urine continues to drain freely through it. In some cases the presence of calcareous deposit, mucus plugs or purulent material hinders drainage. In such cases the catheter should be removed, cleaned and replaced, or a new one used, often enough to assure free flow of urine. Sometimes it is not necessary to change the catheter for two or three months.

Irrigation of the bladder through the catheter once or twice daily with warm 1:5000 solution of potassium permanganate or other mild antiseptic solution helps to keep the catheter open. Some patients do not tolerate an in-dwelling catheter very well; it causes pain, urgency and sometimes bladder spasm and irritation sufficient to result in bleeding. Instillation of a local anesthetic such as metylocaine 1:200 solution into the bladder followed by clamping the catheter off for 30 minutes will relieve the symptoms. This can be repeated as necessary to keep the patient comfortable. Some patients will not tolerate a catheter in any circumstances or will repeatedly pull it out. A rubber or plastic urinal or bag which fits snugly around the penis may solve the problem in some men who have incontinence. Urinary incontinence can be controlled in some elderly women by inserting a 30 cc. Foley bag catheter into the vagina and distending it to the proper size. The pressure of the bag on the urethra may close the canal and thus hold the urine in the bladder. The usual last resort, however, is the use of a large diaper which is changed at frequent intervals. Decubitus ulcers are of frequent occurrence unless the bed is kept dry. The use of an in-dwelling catheter, if at all possible, is by far the best method of managing urinary incontinence.

Sometimes mild bladder dysfunction may benefit from oral administration of drugs. Urecholine (urethane of B-methylcholine chloride, Sharp & Dohme) 10 mg. (two tablets) four times daily or Dibenzyline (phenoxvbenzamine hydrochloride, Smith, Kline and French) 20 mg. (two capsules) four times daily, increases bladder tone and may help to empty a hypotonic bladder. Dibenzyline should never be given to patients with congestive heart failure, nor to those in whom a lowering of the blood pressure is undesirable. Partial urinary incontinence without residual urine may be lessened by the oral administration of Probanthine (B-diiso-

propylaminoethyl xanthine carboxylate methobromide, Searle) 15 mg. four times daily. Frequent voluntary exercise of the urethral, perineal and rectal muscles may aid some patients, women especially, to control urinary leakage. Exercise is not as effective in elderly patients as it is in younger ones.

Infections

Urinary tract infections respond to anti-infection drugs in aged patients as well as in younger ones. The presence of organic lesions, especially any that obstruct urinary outflow, may be the cause of persistence or recurrence of infections. Tolerance to the sulfonamides and to antibiotics is less in older people. Persistence or occurrence of fever after the urine is cleared of infection is usually due to reaction from the medication. The drug should be discontinued when the fever persists after the leukocyte content in the blood is below 10,000 per cu. mm., and especially if the urine has cleared. Other evidences of drug intolerance are headache, malaise, gastrointestinal disturbance and skin rash.

Urinary Calculi

Vesical calculi when less than 4 cm. in diameter can be crushed with a lithotrite and the fragments evacuated. Suprapubic cystostomy is necessary for removal of larger stones. In elderly patients renal calculi which cause no symptoms do not need to be removed. Even though there is some infection in the urine, these old people are better let alone unless the calculus in the kidney causes pain. An anticalculus medical regimen consisting of a special diet, aluminum hydroxide, vitamin A, is hardly worthwhile in these patients; it is a change from their fixed habits, is inconvenient and does not do enough good as far as prevention of calculus enlargement is concerned to be worthwhile.

Renal Tumors

Kidney tumors in patients who are more than 80 years old are best let alone. They usually grow slowly and some other disease will probably cause the death of the patient before the tumor begins to cause annoying symptoms. When, however, a renal neoplasm is diagnosed in a patient who is in the

sixties or seventies, nephrectomy is indicated unless the tumor is so large that extension beyond the confines of the kidney is probable, or there is definite evidence of metastasis.

Urological Operation

Present-day advances in surgical technique and in the control of infection makes operation on aged patients much safer than it was 30 years ago. The transurethral approach for removal of bladder and prostatic lesions is ideal for use in the aged. This of course presupposes that the endoscopic procedure is done expertly and adequately. If not expertly done it can cause a great deal of trouble. Lighter anesthesia can be used for endoscopic operations; muscle relaxation is not necessary. Surgical shock occurs less often and is less severe than when an open approach is used. There is much less postoperative pain following transurethral operation and the convalescence is more rapid.

Sometimes the open approach is required for bladder lesions which can not be treated endoscopically, and for kidney or ureteral disease. Accurate and rapid technique, gentleness in handling tissues, the avoidance of trauma and the broad accurate approximation of healing surfaces are all essential to successful operation, especially in aged patients. Long, deep anesthesia should be avoided; preoperative narcosis should be kept to a minimum, and early activity and ambulation after operation are important. When all these conditions are met, urological operations are tolerated very well by aged patients.

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Sliding Indirect Inguinal Hernia

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APPARENTLY sliding indirect inguinal hernia is still an enigma to many physicians including surgeons who repair large numbers of hernias. It is much more common than generally thought. The recurrence rate following operation is high.

The sac of the ordinary indirect inguinal hernia is formed entirely by parietal peritoneum. When part of the wall of the sac is formed by a viscus, the hernia is called a sliding hernia. Often the medial wall of the sac of an indirect inguinal hernia is formed partially by bladder and its overlying peritoneum. This is usually true in direct hernias. Such conditions cause no great additional problems in repair and will not be considered here. However, when the posterior wall of the sac is formed by the bowel and its overlying visceral peritoneum, it is a true sliding indirect inguinal hernia. The repair may be difficult and does require careful consideration. Proper repair is dependent upon proper understanding of the pathological anatomical changes involved.

These hernias arise because of relaxation of tissues associated with advancing age and increasing obesity. An indirect hernial sac, large or small, is probably present in all cases prior to the beginning of the sliding process. On the left side of the body the distal descending colon (iliac colon) is often in close proximity to the internal inguinal ring and frequently has a mesentery continuous with the sigmoid mesentery. At its base the lateral leaf of the mesentery is continuous with the posterior parietal peritoneum which forms the posterior wall of the hernial sac. As the retroperitoneal connective tissues become infiltrated with fat and as the muscles and fasciae become weaker with age the posterior parietal peritoneum advances through the ring. The intramesenteric connective tissues, also infiltrated with fat, allow the peritoneal leaves of the mesentery to separate and unfold. The lateral leaf of the mesentery follows the parietal peritoneum through the ring. The bowel itself encroaches on the ring and slides through it and dilates it. The process is augmented by the increased intraabdominal pressure associated with increased obesity. Eventually a large

• From 2 per cent to 5 per cent of all indirect inguinal hernias are of the sliding variety. (Sliding hernias are those in which part of the wall of the sac is formed by a viscus.) The proportion of sliding hernias is even higher in the aged. Hernias of this kind are found almost exclusively in males and usually on the left side.

Preoperative diagnosis is not essential if the surgeon can recognize the lesion at operation and knows how to repair it properly. The LaRoque technique in which the peritoneal cavity is entered above the internal ring allows accurate definition of the pathological anatomy and effective repair of the hernia. It should be used in all true sliding indirect inguinal hernias.

loop of bowel and even the medial leaf of the mesentery, may slide through the ring and form the posterior wall of the hernial sac.

On the right side of the body a similar process takes place, allowing the cecum to enter the internal ring. In large hernias on the right side the entire cecum, the ascending colon, the appendix, the appendiceal mesentery, the terminal ileum and the mesentery of the terminal ileum may form the posterior wall of the sac.

Sliding indirect inguinal hernia has been considered to be comparatively rare. It has been reported in from 1 to 3 per cent of inguinal hernias.⁹ At the Los Angeles County General Hospital, hernia repair is a relatively infrequent operation because of the press of more urgent surgical procedures. In the eight-year period from 1943 to 1955 inclusive, inguinal hernia repair was done in 2,688 cases. This number included 52 indirect sliding inguinal hernias, an incidence of 1.9 per cent of all inguinal hernia repairs. Ryan⁶ recently reported 313 cases, which constituted 5.06 per cent of all the inguinal hernia repairs or 6.75 per cent of all the indirect inguinal hernia repairs done in an eight-year period. In persons over 50 years of age the incidence was 10.7 per cent of the indirect inguinal hernias repaired. Sensenig and Nichols⁷ reviewed 1,200 cases of inguinal hernia and noted that 4.9 per cent were sliding hernias. In a series of 361 hernia repairs in 305 patients done by one of the present authors (M. R. G.) there were 295 inguinal hernias of which 246 were indirect, 13 of them sliding, an incidence of 3.6 per cent of all the hernias, 4.4 per cent of

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the inguinal hernias and 5.5 per cent of the indirect inguinal hernias. Undoubtedly, as one's experience with this condition increases, he will recognize some hernias actually to be sliding and not merely large bowel adherent to the wall of the hernial sac.

Sliding indirect inguinal hernias occur almost exclusively in males. The authors found no reported case in a female. However, of the 52 cases studied at the Los Angeles County General Hospital one was in a woman 79 years of age.

Most of the patients operated upon are elderly. The average age at operation at the Los Angeles County General Hospital was 66 years. The youngest patient in the present series was 38 years and the oldest 89 years. The incidence of sliding hernias in patients over the age of 50 years was nine times the incidence in younger persons. Forty-two and one-half per cent of the patients were over 70 years of age.

The left side is involved much more frequently than the right. In Ryan's⁶ series there were 4.5 times more sliding hernias on the left. In the Los Angeles County General Hospital series there were 34 on the left side and 18 on the right. In the previously mentioned personal series (M. R. G.) there were 11 on the left and two on the right. In Ryan's series there were eight bilateral sliding hernias. The authors have seen none. In the 52 cases at the Los Angeles County General Hospital there were ten in which there was an associated nonsliding inguinal hernia on the opposite side.

Such hernias usually are of long duration before operation. In the Los Angeles County General Hospital series the average duration before operation was 13.1 years.

Almost one-half (46.2 per cent) of the hernias in the present series were reducible. Ryan reported that in his series 97 per cent were reducible. In the private series (M. R. G.) the hernia was reducible in all but two of the 13 cases.

Symptoms and signs of intestinal obstruction are reported to be infrequent. However, 21.1 per cent of the patients in the Los Angeles County General Hospital series had some symptoms and signs of obstruction. They were operated upon in emergency, which is indicative of the emergency nature of a large number of the hernia repairs done at this hospital.

The diagnosis often is unsuspected before operation. A large hernia of long standing in an elderly patient should cause suspicion of a sliding hernia. The hernia frequently is difficult to reduce. If reduced, the internal ring almost invariably is found to be very large. Sometimes there is a history of a truss formerly being effective but no longer being effective. Roentgen examination with barium enema may reveal colon outside of the abdominal cavity.

Although the colon shown by x-ray may be free within the sac of an inguinal hernia, it actually may be part of the wall of the sac. Whether the hernia is sliding or not should make no difference to an experienced surgeon. The diagnosis will be made at the operating table and he may proceed with the proper repair without difficulty.

TREATMENT

Accurate diagnosis of a sliding indirect inguinal hernia usually is not made until the sac is opened. For this reason it is important to open all indirect inguinal hernial sacs on the anterior surface so as to avoid opening into bowel which might be forming the posterior wall of a sliding hernia. If colon is found in the sac, it does not necessarily establish the diagnosis of a sliding hernia. The colon may be free within the sac. It may be adherent to the wall of the sac by adhesions or by actual fusion of the lateral leaf of its mesentery to the parietal peritoneum. Such fusion is the normal anatomical finding in those portions of the colon where a free mesentery is not present. The authors do not consider such hernias as true sliding inguinal hernias. However, when the posterior wall of the sac is definitely found to be composed of bowel, it is a true sliding hernia. An inexperienced surgeon is liable to attempt dissection of the colon from the sac. This is impossible, for the colon actually forms the wall of the sac. Such attempts are dangerous. The bowel may be entered or, more likely, the blood supply to it may be damaged.

Regardless of the type of repair the surgeon contemplates, his first maneuver must be to free the entire sac from the cord structures to well above the internal ring. This is usually done with relative ease.

There are many reports of reduction of the hernia entirely from the inguinal approach. Zimmerman and Laufman¹⁰ described placing a purse-string suture about the neck of the sac extending as high on the anterior surface as possible and on the posterior side as close as is safe to the reflection of the peritoneum on the colon. As the purse-string is pulled together the bowel is turned upward and the sac is closed. The sac and bowel are reduced into the abdominal cavity. The transversalis fascia then is closed snugly about the cord to reconstruct the internal ring. Further repair can be done according to the surgeon's usual method. Zimmerman and Laufman reported 24 cases in which this method was used, with no known recurrences, although the length of time of follow-up was not stated. The patients reported by Sensenig and Nichols⁷ were operated upon by an inguinal approach. They mentioned a "bottling" procedure which apparently at-

tempts to reperitonize the mesentery of the bowel as is accomplished in the intraabdominal approaches. In 53 cases they found seven recurrent hernias, a 13 per cent incidence of recurrence. Hagan and Rhoads¹ reported repairing 15 sliding inguinal hernias by the inguinal approach, and a recurrence rate of 55 per cent. Throughout the literature on this subject there are frequent references to the high recurrence rate by any method utilizing only the inguinal approach.

In Ryan's recent report of 313 cases of indirect sliding inguinal hernia the exact method of repair was not described. However, it was made clear that all of the repairs were done from the inguinal region only and were accomplished in much the same manner as described by Zimmerman and Laufman. Freeing of the peritoneal sac from the transversalis fascia well above the internal ring was emphasized, as was snug closure of the internal ring after reduction of the bowel. The exceptionally high incidence of sliding indirect inguinal hernia in Ryan's series (6.75 per cent of all indirect hernias) would lead one to believe that many indirect hernias in which colon is merely seen at the internal ring were being classified as sliding hernias. However, he described the colon as being an average distance of 2.9 inches below the level of the internal ring. The recurrence rate in that series was remarkable—four recurrences in the series of 313 cases, and only one of these definitely known to be a recurrent sliding hernia. In addition, he mentioned another 558 patients with sliding indirect inguinal hernias who had been operated upon subsequent to the reported series, with no known recurrences. He also reported 8,000 cases in which inguinal hernia was repaired and the patient observed for more than one year with only one recurrence of indirect hernia.

Koontz² in an historical review stated that Fiaschi in 1907 was the first to report opening the abdomen above the inguinal canal in order to reduce and fix a sliding hernia and that Robbins in 1909 reported it had been his practice for years to open the abdomen through a rectus incision if there was any difficulty in reducing a sliding hernia. LaRoque³ in 1919 advocated a muscle-splitting incision above the internal ring for all inguinal hernias. In 1932⁴ he described in detail the use of this procedure for sliding hernias. Moschcowitz,⁵ and many other investigators have also described intraperitoneal approaches to hernias.

Williams⁹ in 1947 presented an excellent description of the LaRoque type of repair of sliding indirect inguinal hernia. The authors were impressed by the method at that time and began using it at the Los Angeles County General Hospital, and since then have recommended its use to the resident staff. The greatest drawback seems to be in the ability to un-

derstand the rather complicated maneuvers of the procedure and to teach them to the residents.

The hernial sac should be completely freed from the cord to a level well above the internal ring. The incision in the aponeurosis of the external oblique then is extended upward 6 to 8 cm. above the internal ring. At a level approximately 4 cm. above the internal ring the external oblique and transversus abdominis muscles are split in the direction of their fibers exactly as in the McBurney incision. The peritoneum at this level is opened transversely. On the left side the proximal limb of the descending colon is seen entering the internal ring and the distal limb is seen emerging from the internal ring. By a process of traction on the bowel from above and pressure from below, the bowel is reduced completely into the peritoneal cavity. Even with this advantage of traction and pressure, it is sometimes a tedious procedure to reduce the bowel. It would seem to be very difficult to do this entirely from the inguinal approach.

On the right side the cecum is noted to be extending through the internal ring. The appendix and even the terminal ileum may form part of the sac. Reduction is accomplished in the same manner as is done on the left side. As the bowel is drawn upward into the peritoneal cavity it is also drawn outward through the McBurney-type incision. This maneuver obverts the colon and its mesentery so that the surgeon views the posterior surface of the bowel rather than its anterior surface. On the left it then is apparent that there is actually no lateral leaf of mesentery present in its usual position because it has been spread out by the sliding process. Rather it is noted that the free surfaces of the peritoneal sac represent the lateral leaf of the sigmoid mesentery and that this leaf can be reconstructed only by reapproximating the free peritoneal edges. It is advisable to trim the edges considerably, for by so doing the excess peritoneal sac is obliterated. The edges are approximated with a continuous suture of chromic catgut which is carried down to the base of the mesentery and then upward to the inferior margin of the transverse incision in the peritoneum. We now advocate that the base of the mesentery be anchored to the iliac fascia with one or more sutures. Williams did not describe this step. Fingers placed against the internal ring from the peritoneal side show that the sac has been completely eliminated. The bowel is returned to the peritoneal cavity and the McBurney-type incision closed. It is of major importance that the internal ring be closed snugly by approximating the transversalis fascia medial to the cord. Failure to carry out this step probably accounts for many recurrences. Repair of the floor of the inguinal canal can be done according to the surgeon's dictates.

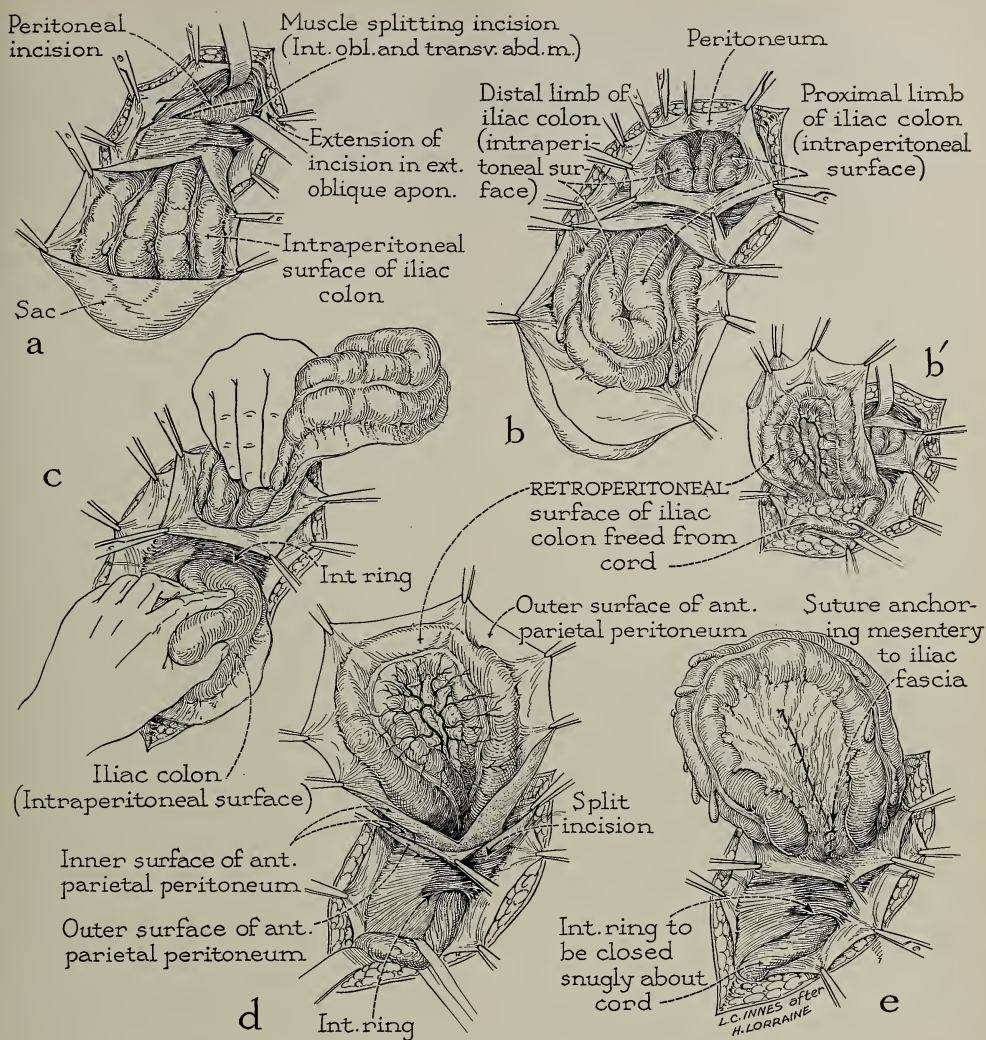


Figure 1.—Principles of the LaRoque maneuver for repair of sliding indirect inguinal hernia. See text for details.

COMMENT

As was stated earlier, the authors have found this a difficult procedure to teach to residents, particularly in view of the fact that at Los Angeles County General Hospital many of the residents assigned to general surgery are from specialized services such as urology, gynecology, orthopedics and neurosurgery. Some of them have attempted the LaRoque procedure when confronted with a sliding indirect inguinal hernia. It was obvious from the operative reports that they were not entirely familiar with its technical details. There were recurrences in seven

of the 52 cases repaired by the LaRoque method, most of them within a few months of operation, which tends to indicate faulty operative technique. Of the 13 patients with repair of sliding indirect hernia done by one of the authors (M. R. G.) in the previously mentioned personal series, there were no recurrences and most of the patients had been observed for more than two years after operation.

In spite of the rather high incidence of recurrence in the Los Angeles County General Hospital series, the authors are not inclined to abandon the LaRoque procedure, feeling that it is a much more logical

approach to the problem of sliding indirect inguinal hernia than the mere stuffing of the bowel into the peritoneal cavity and subsequent snug closure of the internal ring. The "stuffing procedure" violates the first rule of hernia repair—high ligation of the sac. Obviously the sac cannot be ligated high if one of its walls is composed of bowel. The bowel must be reconverted into an intraperitoneal structure in order to eliminate the posterior wall of the sac. The anterior wall is eliminated by resecting most of it and suturing the remainder so as to convert it into a mesenteric structure. Exposure of the pathological process is more complete when viewed from the peritoneal cavity. Opening the lower peritoneal cavity presents no added operative hazard, even in elderly patients. If the operative hazard were excessive, we would prefer excision of the cord and testicle with complete closure of the ring after reduction of the hernia from the inguinal approach. The authors believe that the LaRoque procedure has not received the attention it deserves and that when it is properly taught and properly performed it is an ideal method of dealing with these rather severe problems.

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Discussion by GORDON K. SMITH, M.D., Los Angeles

Dr. Gaspar is to be complimented for the beautiful manner in which he has presented this difficult problem. Explaining the mechanism of the combined inguinoabdominal procedure is akin to explaining to your six year old son where your lap goes when you stand up. Unless you can visualize the anatomic features both from the inguinal and the abdominal side it is almost impossible to understand it. I have been interested in the LaRoque procedure for many years. In addition to its application to sliding hernia, as suggested by Dr. Gaspar, we have increased the scope of this procedure and are also applying it to other forms of inguinal hernia. A recent five-year study of patients admitted to the Hospital of the Good Samaritan, Los Angeles, for repair of recurrent inguinal hernia showed that 61 per cent of these patients had recurrent *indirect* inguinal hernia and 8.7 per cent of these recurrences were sliding inguinal hernia. This suggested that the initial procedure had failed to fulfill the cardinal requirements, viz., the complete obliteration of the hernial sac. Therefore, we now use it in (a) sliding inguinal hernia, (b) recurrent indirect hernia with thin and friable sacs, (c) irreducible hernia with or without strangulation of bowel or omentum, and (d) femoral hernia. Categorical statements have been made such as that by Ryan of Canada who states that it is *never* necessary to open the abdominal cavity to repair a sliding hernia. I am sure that I can handle this complicated anatomical derangement best with a combined inguinoabdominal approach, and therefore I will leave to the other surgeons their "stuffing" procedure from the inguinal side alone. The ease with which the above mentioned forms of inguinal hernia can be handled by the combined incision is remarkable, and as one gains experience with the procedure it decreases the total operating time. I firmly believe that anything that makes a procedure easy for the surgeon reflects itself in a smooth post-operative course. Ryan reports one recurrence in 8,000 operations for indirect inguinal hernia. This statement indicates naivete or insufficient follow-up.

CASE REPORTS

Vaccinia Gangrenosa

A Case in a Child with Hypogammaglobulinemia

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DESPITE the universal employment of Jennerian vaccination in the United States, serious complications are rare. Ordinary complications—febrile reactions, secondary bacterial infection of the vaccination site and nonspecific skin rashes—are self-limited. Postvaccinal encephalitis and generalized vaccinia are the most common of the severe complications.

The incidence of vaccination reactions has been variously reported from one in ten thousand to one in a million vaccinations.⁷ Generalized vaccinia may occur in patients with healthy, intact skin as well as in those with preexisting skin lesions such as eczema or seborrhea. When the skin is normal, the course is self-limited and healing occurs as neutralizing antibodies appear. The dangers of vaccination in the presence of eczema are well recognized, the viremia which may follow primary vaccination favors dissemination. In addition, autoinoculation is an important factor in production of new lesions.

In a small number of cases the primary lesion does not heal, and additional similar lesions appear, then ulcerate and become secondarily infected. The mortality rate in such circumstances is extremely high. Recent evidence suggests that failure to produce a proper quantity or quality of virus neutralizing antibodies predisposes to generalized vaccinia of that type.⁸ In some patients circulating gamma globulin is very low or absent, suggestive of inadequate antibody production. In others, gamma globulin production, although quantitatively sufficient, may be immunologically defective, so that effective neutralizing antibodies are not produced.

The following case is typical of generalized vaccinia gangrenosa with quantitatively deficient gamma globulin and inability to produce vaccinia virus neutralizing antibodies.

REPORT OF A CASE

The patient was a white infant boy, nine months of age. He had been born by normal delivery. The parents were healthy young adults. Two siblings had

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died at ages of four months and four days, respectively, of "infectious diarrhea" and "mongolism." Both the parents were successfully vaccinated as infants, but this had not been done in either sibling.

The patient was breast-fed for seven days after birth, and then weaned to a standard evaporated milk formula. When he was five months of age the formula was changed to soybean milk because of "allergy."

On October 21, 1955, at the age of seven months, the patient was vaccinated in the left deltoid region by the multiple pressure method. A week later a vesicular lesion was visible at the vaccination site and at 14 days the primary lesion had become encircled by many tiny vesicles. The day following the appearance of satellite lesions, larger and rapidly enlarging vesicles appeared on the palms and soles. On the 21st postvaccinal day, fever appeared and persisted until the day of hospital admission. Simultaneously, new vesicular lesions appeared on the hands, buttocks and neck. Treatment during this period consisted of local cleansing of the skin lesions and the administration of 5 cc. of gamma globulin intramuscularly.

The patient was admitted to the Los Angeles Children's Hospital, December 2, 1955.

Upon examination, multiple skin lesions of two types were noted. On the left deltoid region at the vaccination site was an ulcerated area of 4 cm. diameter. There were similar smaller lesions on the face, right arm and trunk. The remaining lesions, ranging from 3 to 6 mm. in diameter, were vesicular and were scattered over the arms and trunk. The hands and feet were covered by large bullae and denuded areas. Small ulcers were observed on the right side of the tongue and the soft palate.

Cultures of material from skin lesions, blood and stools consistently grew *Pseudomonas* and coagulase-positive hemolytic *staphylococcus aureus*. Repeated sensitivity studies were used to guide antibiotic therapy, as indicated in Chart 1.

Throughout the hospital stay there was moderately severe anemia requiring repeated blood transfusions to maintain the hemoglobin at 11 gm. per 100 cc. The number of leukocytes ranged from 6,000 to 12,000 per cu. mm. and there was a persistent pronounced shift to the left in the cell differential. The condition of the patient deteriorated steadily and he died 41 days after admittance. Despite large doses of gamma globulin, of hyperimmune vaccinal gamma globulin and of hyperimmune

NINE MONTH BOY VACCINATED OCT. 21, 1955 DIED JAN. 10, 1956

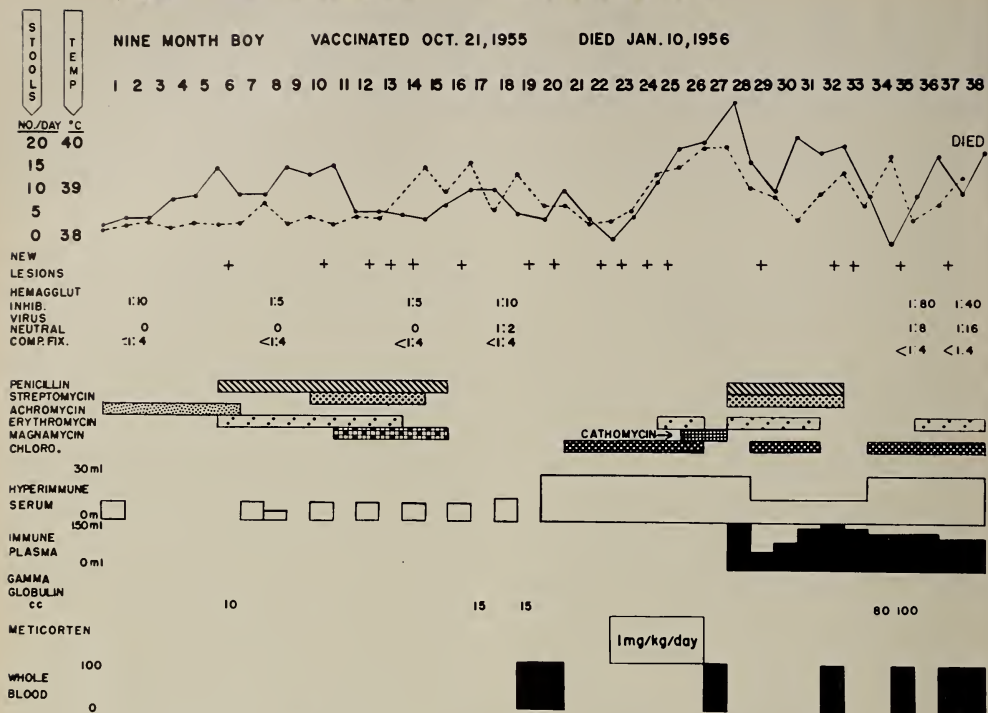


Chart 1.—Summary of clinical data and therapy during period of hospitalization.

vaccinia antiserum, new lesions continued to appear on the face, trunk and extremities. Existing lesions increased in size, some coalescing to form large expanding ulcers. On the seventh hospital day, fine tremors of the hands were first noted and generalized convulsions followed. Lumbar puncture was carried out and no spinal fluid abnormality was noted. On the tenth hospital day feedings were refused. Vomiting and diarrhea soon developed, and serious problems in the regulation of fluids, electrolytes and nutrition ensued.

Appropriate antibiotic therapy was administered in an effort to control secondary bacterial infection. All therapeutic efforts to modify the course of the disease failed.

SPECIAL STUDIES

I. Serum Protein Studies

Filter paper electrophoretic studies of the serum proteins were carried out with the Spinco Model R apparatus. Following migration, the proteins were heat-coagulated, stained with bromophenol blue, and fixed with sodium acetate. A Spinco Analytrol, a servo-type integrating scanner, was used to measure relative concentrations of protein fractions as indicated by amounts of dye present along the strips.

It is important to point out that the normal values tabulated in Table 1 are not entirely comparable to the patient's age group. Infant values were derived from cord blood of newborns. The abnormally low gamma globulin content on December 7, 1955 despite the administration of 15 cc. of gamma globulin in the preceding two weeks is significant. (This should account for a good portion of measurable gamma globulin.) Later rises were achieved by the administration of large amounts of gamma globulin.

II. Serological Tests

With laboratory techniques used by Kempe, hemagglutination inhibition titer of 1:80 to 1:160 and virus neutralization titer of 1:8 to 1:16 would be expected in normal persons one to two months following vaccination. In this patient low titers following eight weeks of continuous exposure to vaccinia virus (Table 2) indicated inability to produce specific circulating antibody.

Slowly increasing titers were associated with administration of 330 cc. of gamma globulin, 585 cc. of hyperimmune vaccinal gamma globulin, and 1,645 cc. of plasma from recently vaccinated adults.

III. Viral Studies

Inoculation of scrapings of lesions and vesicular fluid on chorio-allantoic membranes of hens' eggs

TABLE 1.—Results of Serum Protein Studies

Serum Protein Fractions	Normal for Infants* (Per Cent)	Normal for Adults* (Per Cent)	Patient		
			Dec. 7, 1955 (Per Cent)	Dec. 19, 1955 (Per Cent)	At Death (Per Cent)
Albumin.....	41.3	52.5	45.0	33.0	38.0
Gamma 1.....	7.1	4.2	6.0	8.0	7.0
Gamma 2.....	11.6	12.2	30.0	23.0	16.0
Beta.....	12.6	14.0	14.0	14.0	7.0
Delta.....	27.4	17.1	5.0	22.0	32.0

*Sohar, E., et al.: Science 123:461.

TABLE 2.—Titration Responses at Various Times During Exposure to Vaccinia Virus

	Dec. 3, 1955	Dec. 8, 1955	Dec. 13, 1955	Dec. 19, 1955	Jan. 7, 1956	Jan. 8, 1956
Hemagglutination inhibition titer.....	1:10	<1:5	1:5	1:10	1:80	1:40
Complement fixation titer.....	<1:4	<1:4	<1:4	<1:4	<1:4	<1:4
Virus neutralization titer.....	0	0	0	1:2	1:8	1:16

resulted in typical vaccinia lesions. Saline solution suspensions of the finely ground membranes agglutinated susceptible chicken red blood cells. This reaction was inhibited by immune vaccinia rabbit serum but not by normal rabbit serum and was considered evidence of the presence of vaccinia virus. Suspension of various tissues obtained at autopsy were also inoculated on the chorio-allantoic membranes of hens' eggs. Typical pock lesions were obtained from suspensions of nerve, lung, stomach, and adrenal tissues.

PATHOLOGIST'S REPORT

Conditions noted at autopsy were as follows: Scattered over the entire body were numerous lesions, some vesicular with umbilicated centers, others with rolled margins and crusted central areas of ulceration. The diameters varied from 1 mm. to 5 or more cm. The dorsal surface of the right hand was completely denuded of epithelium as was most of left hand. Palmar and plantar surfaces were covered by a friable yellow exudate. Petechiae were present over the upper thorax. The pericardial cavity contained 15 cc. of turbid fluid containing several masses of friable yellow material. The epicardium was thickened and a yellow necrotic abscess was present near the coronary sulcus. A 2 mm. friable, yellow vegetation was present on the mitral valve, and two small abscesses were present within the myocardium. Patchy atelectasis was noted in the lungs. An extensive ulceration of the false vocal cords was covered by friable fibrinous exudate. Opposite this area the esophagus showed similar extensive ulceration. The liver was enlarged and studded with small yellow areas of fatty change. Several small ulcerations were observed in the gastrointestinal tract. Two large succulent lymph nodes were present near the bifurcation of the aorta, without other adenopathy. The cranial vault contained a considerable amount of clear fluid and the brain itself appeared small with atrophy of gyri.



Figure 1.—Photograph six weeks after vaccination showing distribution of lesions.

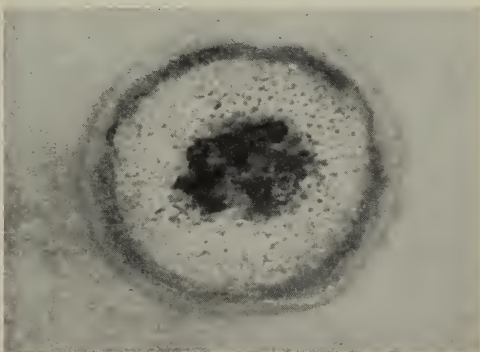


Figure 2.—Close-up view of lesion showing rolled edges and central granulation.

Microscopic examination revealed abscesses in the myocardium and epicardium, with central coagulation necrosis, surrounded by a more chronic inflammatory reaction in which mononuclear phagocytes were prominent. Large clumps of bacteria were

present within the abscess centers. The mitral valve vegetation was composed of granular debris, polymorphonuclear leukocytes and small numbers of bacteria. The thickened underlying valve was infiltrated by multinuclear cells. Ulcerations of larynx and esophagus were morphologically similar to the myocardial abscess cavities. An ulcer of the small intestine showed coagulation necrosis. Skin lesions consisted of vesicles with underlying coagulation necrosis. Other ulcerated skin lesions were covered by coarse necrotic material with relatively few inflammatory cells and no bacteria.

DISCUSSION

The patient in the present case had a rare complication of smallpox vaccination and the conditions were similar to those in previously reported cases of patients with vaccinia gangrenosa and immunologic handicap manifest by deficiency of circulating gamma globulin.^{2,7,8,9} The present case must be considered an example of hypogammaglobulinemia since gamma globulin was never demonstrated to be entirely absent. To what degree previously administered gamma globulin contributed cannot be ascertained.

In the normal course of vaccination, inoculated vaccinia virus multiplies locally for six to eight days. During this time viremia may develop, lasting until neutralizing antibodies appear at 12 to 14 days. Metastatic lesions may develop during this period of viremia. As antibodies are produced the virus disappears from body fluids coincident with healing of local lesions.⁷

A few children, without preexisting skin involvement, have apparent inability to produce vaccinia virus neutralizing antibodies either in sufficient quantity or quality. In such children generalized vaccinia with the following characteristics may develop:

(1) Prolonged course of illness; (2) occurrence of new lesions which enlarge, ulcerate and do not heal; (3) demonstrable failure of antibody formation against vaccinia virus and other antigens; (4) a high mortality rate.

Interest in persons deficient in the production of antibodies was aroused by Bruton's report describing a child with pronounced susceptibility to bacterial infections.³ Absence of serum gamma globulin was demonstrated, as well as inability to produce antibodies, when the child was subjected to numerous antigenic stimuli. Since then increasing awareness of this entity has uncovered many instances of gamma globulin deficiency in children and adults.^{4,6,10}

It is of interest that in general, viral infections are usually well tolerated by these patients who have increased susceptibility to bacterial infection. One exception to the general rule is apparent susceptibility to vaccinia virus. Severe necrotizing lesions have been reported with high frequency in patients with this immunologic handicap. On the other hand,

many patients with hypogammaglobulinemia have been vaccinated without complications.^{3,6}

Most instances of vaccinia gangrenosa have occurred in children with hypogammaglobulinemia, but the disease also occurs in children with normal or elevated gamma globulin levels where antibody production is defective and therefore valueless as a means of defense.^{2,8}

Reports of vaccinia gangrenosa are few. Since Ackland's first report in 1893¹ describing a three-months-old infant with this complication, 11 additional cases have been described,^{7,9} most of them fatal. Recently, Barbero and co-workers reported the case of a child successfully treated with hyperimmune vaccinal gamma globulin,² but the patient differed from the others in that circulating gamma globulin was present in normal quantity.

No satisfactory means of treatment is known. Since antibody production cannot be improved, administration of preformed, normal antibodies is most logical. Hyperimmune gamma globulin and serum from persons recently vaccinated are the only available source of these factors. The quantity administered should be sufficient to produce a measurable neutralizing effect on the vaccinia virus if a fatal outcome is to be prevented. Since neutralizing activity diminishes rapidly within seven to ten days, serum should be administered at frequent intervals. It has been shown that gamma globulin in dosage of 0.1 gm. per kilogram of body weight every 28 days affords protection against bacterial infection in patients with hypogammaglobulinemia.¹⁰

The second major problem is management of the secondary infection which occurs in the skin lesions. With subsequent systemic invasion, generalized involvement of other organs contributes to the high mortality rate. Hemolytic staphylococcus aureus is the chief offender and successful eradication of it may be difficult because frequently the organism is resistant to antibiotics.

Antibiotic therapy should be first directed to prevention of establishment of the secondary invaders and secondly to eradication of them once they are established. Proper cultural methods with frequent sensitivity studies of isolated organism can guide in choice of drugs.

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ACKNOWLEDGMENT

We are grateful to Dr. C. Henry Kempe of the University of California School of Medicine, San Francisco, for the serological and viral studies and for invaluable advice in the management of the patient herein reported upon.

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Idiopathic Segmental Infarction of the Omentum

Case Report in a Child

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IDIOPATHIC SEGMENTAL INFARCTION of the greater omentum is one of the rare causes of acute abdominal symptoms. It is even more unusual in children than in adults. Tille⁶ collected reports of 26 cases from the literature, only one of which was in a child. Since the review by Tille, five additional cases in children have been reported.^{1,3,4,5}

Primary torsion of the omentum with subsequent infarction is an equally rare condition in children—only six cases were mentioned in a recent study by Davis, Mangels and Bolton.² Idiopathic segmental infarctions and primary omental torsion with infarction are indistinguishable clinically. They differ only in that definite omental torsion (without evident cause) is the etiological factor in the one group. In children, omental infarction due to any cause has always been confused with acute appendicitis, and operative intervention has generally been prompt.

REPORT OF A CASE

A 9-year-old Caucasian boy was admitted to the Los Angeles County General Hospital on April 21, 1955, because of sharp, persistent pain in the right lower quadrant of the abdomen of one day's duration. Sudden in onset, the pain was initially located in the right lower quadrant and was nonradiating. Anorexia was noted, but there was no nausea, vomiting or change in bowel habit. There was no history of previous similar episodes or of any abdominal injury. The only previous significant illness was mumps.

Upon physical examination the blood pressure was observed to be 100/60 mm. of mercury, the

Submitted April 17, 1956.

pulse rate 80, the temperature 100° F., and respirations 22 per minute. The patient was well-developed and well nourished. The abdomen was flat; no palpable organs or masses were noted. Peristalsis was present, but hypoactive. There was moderate tenderness with rebound in the right lower quadrant, most pronounced near McBurney's point. No other abnormalities were noted.

The hemoglobin content was 12.0 gm. per 100 cc. of blood. Leukocytes numbered 12,000 per cu. mm.—75 per cent polymorphonuclear cells. Results of urinalysis were within normal limits.

The clinical diagnosis was acute appendicitis. At operation, the abdomen was opened with a McBurney incision and a moderate quantity of serosanguineous fluid was immediately noted. The appendix was observed to be normal. A search was made for a Meckel's diverticulum but none was found. The right lower margin of the greater omentum which lay in the upper portion of the right lower quadrant was a hemorrhagic, infarcted mass 4 x 6 cm. in size. No omental torsion, internal herniation, or any other mechanical factor to account for the omental infarction was noted upon careful inspection. Resection of the infarcted omentum was performed along with appendectomy, and the abdomen was closed without drainage. The postoperative course was uneventful. The pathologic description of the resected specimen was consistent with the gross impression of omental infarction (see Figures 1, 2, 3).

COMMENT

The pathogenesis of idiopathic segmental infarction of the omentum is as obscure as the name implies. The most plausible explanation seems to be that "spontaneous" venous thrombosis occurs and is followed by congestion, inflammatory reaction, necrosis and extravasation of blood. Trauma, temporary torsion, or increased intraabdominal pressure following the ingestion of a heavy meal may be etiologic factors in the initial thrombosis.⁶ Attempts have also been made to link obesity with the etiology of omental infarction. The fact that a child's omentum is underdeveloped and often relatively devoid of fat may help to explain the greater rarity of the condition in children than in adults. The most common anatomical site of omental infarction is the right lower margin of the greater omentum.

The clinical symptoms and signs consist of: (1) Pain, either steady or colicky in nature, usually beginning in and remaining in the right lower quadrant of the abdomen; (2) anorexia and nausea usually without vomiting; (3) tenderness, and sometimes rigidity, localized near McBurney's point; and (4) a low grade fever with leukocytosis in most instances.

At operation, dark, bloody peritoneal fluid is found with a gangrenous, edematous, infarcted segment of omentum. Microscopic examination of the infarcted omental tissue shows edema and inflammatory cell infiltration.

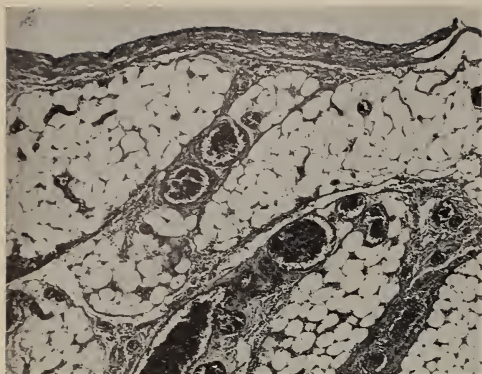


Figure 1.—Numerous dilated, engorged blood vessels with scattered foci of inflammatory cells. (×200)

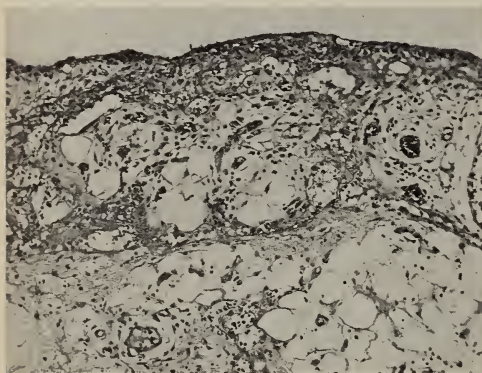


Figure 2.—Another area of specimen, with early fat necrosis and fibrinocellular exudate. Note foreign body giant cells in central portion. (×200)

It is important to be aware that omental infarction may cause acute abdominal symptoms—particularly when operation is done for acute appendicitis and the appendix is observed to be normal. It is then that omental infarction must be looked for, along with other entities such as acute Meckel's diverticulitis. Bloody peritoneal fluid should arouse suspicion of omental infarction.

Omental infarction should be treated by excision of the involved omental segment. Incidental appendectomy is also indicated. In all reported cases, recovery was prompt and complete.

SUMMARY AND CONCLUSIONS

Idiopathic segmental infarction of the omentum is a rare cause of acute abdominal symptoms. It is usually confused with acute appendicitis.

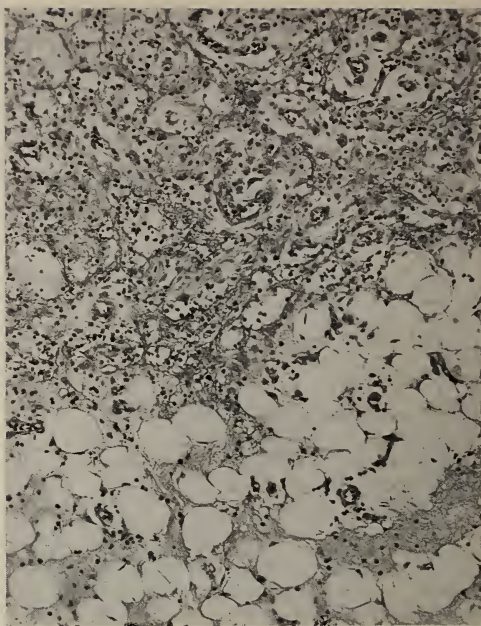


Figure 3.—Proliferation of blood vessels, inflammatory cells and fat cells separated by fibrin. (×200)

A case is reported in a 9-year-old child. It is believed to be the seventh reported case occurring in childhood.

Omental infarction is one of the entities to be considered and looked for when operation for appendicitis is done and the appendix is normal. Bloody peritoneal fluid is usually present.

Omental infarction is best treated by excision of the infarcted segment. Recovery is usually prompt.

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California MEDICINE

For information on preparation of manuscript, see advertising page 2

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EDITORIAL

More Medicare

MEDICINE'S OPPORTUNITY to show its ability to handle large groups of patients on a sound economic basis was discussed here in last month's issue. The case in point was the "Medicare" program of the U. S. Department of Defense, the plan to provide uniform medical, surgical and hospital benefits for the dependents of military personnel.

At this writing the program is one month closer to reality. It is planned to make benefits available to military dependents on December 7, the anniversary of the Pearl Harbor attack.

Also at this writing the position of physicians in California is much clearer than 30 days ago.

In the interim of the past month, representatives of the California Medical Association and of California Physicians' Service have negotiated with Department of Defense representatives in considering a contract which would place the Defense Department in the position of guaranteeing and paying for the care to be given beneficiaries in civilian facilities, put the C.M.A. in the position of lending its prestige and moral suasion to the physicians of the state in asking their participation for the public good and adding C.P.S. as the fiscal agent. The province of C.P.S. would be to handle the book-keeping, billing, collecting and distribution of fee payments.

Under the three-way contract, dependents of military personnel would be given proper identification by military commanders in the area and, on this basis, would seek medical, surgical or hospital care to which they are entitled, either through military facilities or private physicians and private hospitals. The law establishing this system provides that dependents of military personnel who are stationed in other areas may seek either private or military care. For families living together at military installations,

the Department of Defense may offer military facility care only but present indications are that the Department of Defense will not exercise this option at the outset. If that policy is followed, all military dependents may have the choice between military or civilian care.

In terms of numbers, it was pointed out last month that there are an estimated 2,000,000 military dependents at this time. It is also estimated that about 40 per cent of that number, or 800,000, would be eligible for civilian care. How many of these are located in California is only guesswork. Many military people stationed overseas or in other states have left their families here; the Department of Defense cannot accurately estimate the total. However, California Physicians' Service has estimated, for the purpose of calculating costs, that about 5,000 cases per month may be handled.

If the entire 800,000 dependents are actually given a choice between military and civilian care, the number of cases, here and elsewhere, may well rise to much greater figures than present estimates would indicate.

At this writing the three-way contract is subject to approval by the Council of the C.M.A. and the Board of Trustees of C.P.S. before it is formally signed and delivered to the Department of Defense. While the actions of these two bodies cannot be forecast with certainty, the terms of the new contract are well enough known, and the basic principles involved already sufficiently approved, to suggest that both governing boards will accept the new contract, at least as a starter.

The Medicare contract will represent a new program for both the Department of Defense and the private physicians of the country. The government is admittedly offering a uniformity of medical service to the dependents of its military personnel as a fringe benefit designed to make military service

more attractive. The current military enrollment of some 3,000,000 includes some 2,000,000 men who are serving involuntarily as draftees. Further, about 1,000,000 men a year drop out of the military forces through retirement or completion of their draft terms. To make it more attractive for those who contribute to this huge turnover to remain in the armed forces, the government is offering the financial and moral incentive of care for the family dependents of the uniformed men.

How many military dependents will seek civilian care under this program, nobody knows. Just how well the program will work out is also moot. As a new endeavor on the part of both government and civilian physicians, the program presents a number of questions which will be determined only by experience.

To date the Department of Defense has clearly indicated its desire to utilize civilian hospitals and civilian physicians in the Medicare program and to deal with representative medical organizations in contracting for the desired services. Only one state has declined to cooperate on this basis.

In the near future the decisions of the C.M.A. Council and the C.P.S. Board of Trustees will be known. If both bodies favor signing the contract,

the machinery will be put in motion to inaugurate the plan on December 7. When official sanction has been voted, members of the California Medical Association will be provided with full information about the plan, a schedule of fees to apply and directions for handling patients who are eligible. The time is short but as much advance notice as possible will be given to all members.

In putting this program into effect, civilian physicians will be undertaking the responsibility of providing the finest medical service possible to this group of military dependents. The doctors are on notice that the government can take this program away from them if it so desires or if the quality of service falls below acceptable standards. It is obvious that many governmental officials would prefer to handle all this care in military establishments alone, to the exclusion of all civilian facilities.

This threat will hang over the heads of private physicians during the trial period of the Medicare program. In due time we will know whether or not medicine can discharge this trust in exemplary fashion. Meanwhile, it is incumbent on all physicians to handle this program as a trust, an obligation of the entire profession and an opportunity to prove the true potential of the medical profession.

Letters to the Editor...

Referring to the Medical Directory of the California Physicians issued by the Board of Medical Examiners, Volume 1956, I was surprised to find a most radical change therein.

The earliest directory I have is a very small issue of 1904 in which the doctors in the various cities of the state were listed in the cities in which they practiced. Subsequently the roster of members was classed into counties and has thus existed until this 1956 issue. In that issue the doctors are not classified as to the respective counties but are under one general heading in alphabetical order. Not only did the previous directories classify the physicians as to counties, but also specified the number of physicians in such county.

For statistical purposes of course this was very valuable to those interested.

Frequently I have occasion to refer patients to a physician in a county in which they live and in the past have found no difficulty in thus locating a physician. Under the present setup it would be almost impossible to locate a physician in a designated county.

I cannot account for this radical departure from a system which to my knowledge has been in vogue for over fifty-three years and am writing you hoping you might bring this matter before our physicians and suggest that those who object to the 1956 directory send their protest direct to the Board of Medical Examiners. . . .

Yours very truly,

OTTO D. FREYERMUTH, M.D.

516 Sutter Street, San Francisco.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 421st Meeting of the Council, St. Francis Hotel, San Francisco, September 30, 1956.

The meeting was called to order by Vice-Chairman Heron in Room 217 of the St. Francis Hotel, San Francisco, on Sunday, September 30, 1956, at 9:30 a.m.

Roll Call:

Present were President Charnock, President-Elect MacDonald, Speaker Doyle, Vice-Speaker O'Neill, Secretary Daniels, Editor Wilbur and Councilors West, Loos, Wadsworth, Pearman, Harrington, McPharlin, Sherman, Bostick, Teall, Kirchner, Varden, Heron, Carey and Rosenow.

Absent for cause, Councilors Wheeler, Lum and Reynolds.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy and Gillette of C.M.A. staff, legal counsel Hassard, Messrs. Ben H. Read and Eugene Salisbury of the Public Health League of California, Rollen Waterson, consultant, county society executive secretaries Scheuber of Alameda-Contra Costa, Bannister of Orange, Neick of San Francisco and Thompson of San Joaquin, Doctor Jay Ward Smith, assistant dean of Stanford Medical School, Doctor Joseph T. Ross, assistant dean of University of California at Los Angeles Medical School, Doctors A. E. Larsen and William Gardenier and Messrs. K. L. Hamman, Wilson Walberg and Richard Lyon of California Physicians' Service, Doctor Malcolm H. Merrill, State Director of Public Health, and Doctors John M. Rumsey, Francis J. Cox, Walter Batchelder, Matthew N. Hosmer, Andrew M. Henderson, Jr., and Joseph F. Sadusk, Jr.

1. Minutes for Approval:

On motion duly made and seconded, minutes of the 420th Council meeting, held July 28, 1956, were approved.

2. Membership:

(a) A report of membership as of September 15, 1956, was presented and ordered filed.

(b) On motion duly made and seconded in each instance, three applicants were voted Retired Membership. These were: Helen Hopkins, Trueman I. Wigim, Los Angeles County; Carl F. Birkenstock, San Diego County.

(c) On motion duly made and seconded in each instance, 11 applicants were voted Associate Membership. These were: Ruth M. Jolly, F. Y. K. Lau, Alameda-Contra Costa County; Nicholas S. Assali, David A. Harris, Irwin M. Weinstein, Los Angeles County; Ralph T. Duddles, Madera County; Clara L. Hughes, Wesley Maxfield, Jr., San Bernardino County; C. Carroll Jones, San Diego County; Renate G. Leo, San Francisco County; Herbert S. Breyfogle, Santa Clara County.

(d) On motion duly made and seconded in each instance, seven applicants were voted reductions in dues.

(e) On motion duly made and seconded, 30 delinquent members whose 1956 dues have now been received were voted reinstatement.

3. Financial:

(a) A report of bank balances as of September 15, 1956, was presented and ordered filed.

(b) Mr. Hunton called the attention of the Council to the following:

DONALD A. CHARNOCK, M.D.	President
FRANK A. MacDONALD, M.D.	President-Elect
JAMES C. DOYLE, M.D.	Speaker
J. NORMAN O'NEILL, M.D.	Vice-Speaker
DONALD D. LUM, M.D.	Council Chairman
ALBERT C. DANIELS, M.D.	Secretary-Treasurer
IVAN C. HERON, M.D.	Chairman, Executive Committee
DWIGHT L. WILBUR, M.D.	Editor
JOHN HUNTON	Executive Secretary
General Office, 450 Sutter Street, San Francisco 8	

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cil to the relatively low level of the Association's cash resources and stated that it may be necessary to borrow funds from the Trustees of the California Medical Association before the close of the year.

(c) Mr. Hunton and Doctor Heron reported on their review of the membership procedures of a county medical society which had requested all or a part of the funds received from the American Medical Association for the collection of A.M.A. dues. In their opinion the additional work required to effect this collection did not warrant a subsidy by the Association and, on motion duly made and seconded, it was voted that no subsidy for this purpose would be advanced.

4. *Commission on Medical Services:*

(a) Doctors Hollis, L. Carey, Francis J. Cox and John M. Rumsey presented a schedule of allowances for submission to the Department of Defense as a basis for negotiation of a contract to provide medical and hospital care to the dependents of military personnel under the terms of Public Law 569, the "medicare" program.

After considerable discussion, on motion duly made and seconded, it was voted to accept the recommendation of the Commission on Medical Services, the Fee Schedule Committee and the Committee on Government-Financed Medical Care Programs for such schedule and to authorize the last-named committee, chairmanned by Doctor Rumsey, to negotiate with the Department of Defense on a contract to provide medical and hospital care for military dependents. Councilors West, Teall, Varden and Rosenow were recorded as voting against the motion.

(b) Doctor Carey reported on current developments in the field of investigating the care of the aged in various counties.

(c) Doctor Carey requested approval of a plan to make available to county medical societies the services of representatives of the Health Insurance Council for discussions on voluntary health insurance contracts. On motion duly made and seconded, this proposal was approved.

5. *Commission on Medical Education:*

On motion duly made and seconded, the Executive Committee was authorized to meet with the Executive Committee of the California Hospital Association for a discussion of the handling of problems incurred in placing foreign medical school graduates as hospital house staff members.

6. *Blood Banking:*

On motion duly made and seconded, the proposal of the Executive Committee for working out a blood banking situation in one area of California was approved.

7. *State Department of Public Health:*

Doctor Malcolm H. Merrill, State Director of Public Health, reported that the experience in the current poliomyelitis season bears out earlier predictions concerning the safety and effectiveness of the Salk polio vaccine. The vaccine has proved effective in preventing paralytic polio in 85 per cent of the cases and preventing nonparalytic polio in 70 per cent of the cases, he said. He stated that there is a large backlog of unused vaccine at this time and that supply is no longer a problem. Some 2,000,000 Californians have now had one inoculation of the vaccine, about 1,700,000 have had two inoculations and some 25,000 to 30,000 have had three. Doctor Merrill asked approval of a statement which would urge that all citizens under age 40 avail themselves of the Salk vaccine, and on motion duly made and seconded, this statement was approved.

8. *Committee on Scientific Work:*

(a) Doctor Albert C. Daniels, chairman of the Committee on Scientific Work, discussed the committee's report on its consideration of a health fair exhibit, which found that such an event would have a public value but would require a great amount of planning and a period of two years or more to realize. On motion duly made and seconded, the report was accepted.

(b) Doctor Daniels also asked authority to plan the annual President's dinner for Tuesday evening, rather than Monday. On motion duly made and seconded, this scheduling was approved.

9. *Committee on School Health:*

Doctor Albert C. Daniels, chairman of the Committee on School Health, reported that the second annual School Health Conference would be held in Fresno on October 19 and 20 and urged members of the Council to attend.

10. *Medical Review and Advisory Board:*

(a) Doctor Joseph F. Sadusk, Jr., chairman of the Medical Review and Advisory Board, reported the Board's belief that a well-planned campaign of information to the public and an educational campaign to the profession should be started soon. He stated that meetings were being planned for physicians in the northern and southern areas in the near future.

(b) On motion duly made and seconded, it was voted that the California Medical Association urge the county medical societies to interest themselves in the quality of the professional work in hospitals, where indicated by study of malpractice claims and incidents, and to exert every reasonable and proper influence upon hospital medical staffs to set up and

maintain effective staff organizations for the supervision and control of the professional work to the end that actual malpractice will be prevented and a uniformly high standard of medical care will be delivered to the public.

(c) Doctor Sadusk suggested that the portions of the "San Mateo Study" dealing with the public be made available for publicizing under conditions where the Committee on Public Relations approved all releases and where the profession was advised in advance of such releases. On motion duly made and seconded, it was voted to approve this program.

(d) Doctor Sadusk asked approval of the production of a film to make physicians more aware of professional liability exposure. On motion duly made and seconded, it was voted to approve such a film.

11. *Commission on Public Health and Public Agencies:*

(a) Doctor Francis E. West, chairman of the Commission on Public Health and Public Agencies, reported on studies made by the commission in considering the availability of specialists in other professions for the treatment of crippled children's cases. On motion duly made and seconded, it was voted to advise the State Department of Health that this matter was under study.

Adjournment:

In honor of the late Doctor Francis T. Hodges the Council observed a standing moment of silence and the meeting was adjourned in his memory.

IVAN C. HERON, M.D., *Vice Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

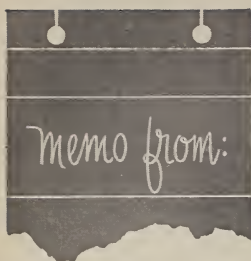
License Plates

An osteopathic organization recently requested the cooperation of the California Medical Association in asking that license plates for physicians' cars carry the letters PHY. While there is considerable opposition to the designation of doctors' cars in this manner because of proneness to raids by addicts, unconscionable demands in highway accidents, etc., there does appear to be one area where medical men might be identified by their license numbers.

This is in the reserved parking spaces for doctors' cars on hospital grounds. In a large hospital, with staff members coming and going at all hours of the day, an emergency could well demand the services of a particular type of specialist. A hospital attendant might find it convenient to check the parking area to find the type of doctor he wanted.

If this proposal catches on, we would suggest the following:

General practitioner	AGP	Pathologist	CPC
Ophthalmologist	EYE	Radiologist	XRA
Otolaryngologist	ENT	Proctologist	OSS
Obstetrician	OBS	Internist	YNT
Gynecologist	GYN	Surgeon	SUR
Urologist	EZP	Orthopedist	BON
Dermatologist	DER	Hospital Superintendent . . .	SUP
Industrial surgeon	YND	Chief of Staff	COS



medical review

and advisory board

OF THE CALIFORNIA MEDICAL ASSOCIATION

THIS PAPER was presented before a meeting of plaintiffs' attorneys, including those who specialize in malpractice actions against physicians—the National Association of Claimants' Compensation Attorneys (NACCA).

Doctor Eastman is known internationally for his contribution in the field of obstetrics. In recent years his interests have led him into the field of forensic obstetrics, a complex and difficult subject. Some of these problems are explored by Dr. Eastman in this paper and his comments will be of interest to physicians and attorneys.

It is to be hoped that NACCA members benefited by this accurate and scientific presentation.

JOSEPH F. SADUSK, JR., M.D., *Chairman*
C.M.A. Medical Review and Advisory Board

The Plaintiff's Attorney and Obstetrics

NICHOLSON J. EASTMAN, M.D., *Baltimore*

I DEEM it a high compliment to be invited to address this great assembly of distinguished attorneys. To say that it is a rare privilege is an understatement, because I am certain that this is the first occasion upon which an obstetrician has had the opportunity—and the temerity—to discuss with any large legal group the mutual problems of obstetrics and the law. But it is an auspicious occasion full of potentialities. Indeed, it would be my hope that we may set a precedent here today which will culminate in more frequent meetings between members of the two professions to the end that both groups may approach the manifold problems of forensic medicine with fuller knowledge, deeper insight and broader perspective.

Obstetrics differs from other branches of medicine in several respects but it will suffice for our present

purpose to consider just one difference: Whereas in other types of medical practice, the physician in any given case assumes responsibility for only one patient, in obstetrics he assumes responsibility for two patients, the mother and the unborn child.

In regard to the mother, various advances in obstetrics during the past two decades have improved her outlook immeasurably so that the number of women dying in childbirth in the United States today is less than one per thousand live births. This is one-sixth the maternal mortality rate which obtained just 20 years ago. Numerous maternity hospitals, furthermore, can report series of 5,000 and more consecutive births without the loss of a single mother.

But, alas, for the unborn child (or "fetus," as we call it), the story is quite a different one. Year in and year out, about 150,000 potential American citizens are either born dead or die shortly after birth, so-called "perinatal deaths." These 150,000 perinatal

Read by invitation at the annual convention of the National Association of Claimants' Compensation Attorneys, Cleveland, Ohio, August 19, 1955.

The author is Professor of Obstetrics, Johns Hopkins University School of Medicine, Baltimore.

deaths constitute about 10 per cent of all deaths occurring in this country at all ages and from all causes. About half of them occur as the result of premature birth. An even greater source of fetal wastage is miscarriage, for it is estimated on sound grounds that at least 10 per cent of all pregnancies terminate spontaneously as miscarriages. This means that over 400,000 miscarriages take place in the United States every year. Careful examination of the tissues passed in these miscarriages shows beyond question that the majority are due to gross malformations, either of the fetus or of the surrounding membranes. Thus, in many cases there is no fetus at all, while in others, microscopic examination reveals such defective development of the vital organs (such as absence of the heart), as to make survival quite impossible. In other words, for the most part, miscarriage is simply nature's way of getting rid of a grossly defective product of conception. Finally, in discussing these 400,000 spontaneous miscarriages which occur annually in this country, let it be clearly understood that I am leaving out of consideration entirely the half million and more pregnancies which are terminated each year through criminal abortion.

But there is an even greater tragedy perhaps than the actual death of a newborn infant or the loss of a pregnancy through miscarriage. That is the birth of a baby whose brain never develops, who continues, like a vegetable, to grow and develop physically, but who lacks the cerebral centers which govern speech, muscular coordination and reason. The frequency of this tragic condition, cerebral palsy, is much greater than ordinarily realized because such children are rarely seen, for they have to be kept in institutions behind locked doors. Their total number in this country has been estimated to be in excess of 300,000—a source of daily heartache to more than half a million parents scattered throughout our land.

Accordingly, it can be said without exaggeration that the outlook for the fetus in any given pregnancy is a hundred times more precarious than that of the mother. Let this fact be emphasized because it is this tenuous hold which the fetus has on life and the sundry vicissitudes to which it is heir that give to forensic obstetrics its broad scope, its color and fascination. It is true that legal action is occasionally brought because of injuries alleged to have been suffered by the mother, quite apart from the child, but these, for the most part, have their counterparts in the fields of surgery and internal medicine and tend to fall into such familiar categories as anesthesia accidents, improperly performed operations, operations performed without proper

permission, and errors in diagnosis. It is the vagaries of fetal outcome and the wide range of fetal interests involved that make forensic obstetrics a distinctive branch of medical jurisprudence.

In my own experience the gravamen most frequently met in forensic obstetrics is alleged traumatic miscarriage, that is, miscarriage which is claimed to have been caused by trauma, either physical or psychic. Miscarriages in which some kind of physical impact is said to have been the cause are more common than those attributed to psychic trauma. Automobile accidents and injuries received in industrial plants account for most of these. Such cases rarely go to the higher courts, are often settled without trial and, in main, the damages allowed have been small. Nevertheless, the frequency of these cases gives them at least a high nuisance value. This is shown by the fact that even in World War II, when airplane and ammunition plants were clamoring for personnel, they adamantly refused to employ a pregnant woman and discharged any employee if she became pregnant. Several personnel managers of such plants have explained their stand in this matter as follows. Their intolerant attitude toward pregnancy was not based at all on any incapacity of pregnant women to perform the light physical tasks usually assigned to them, nor to any fear that such tasks would be injurious to such workers. It was based solely on the sorry experience that if a pregnant woman in their employ suffered a miscarriage, she was almost certain to think back, blame it on some mishap in the factory and bring suit. The records of such plants show that these women rarely reported the alleged accident at the time of its occurrence despite strict orders to all employees to report all accidents promptly. They simply recalled the mishap on retrospect after the miscarriage had occurred. What is the truth about traumatic miscarriage?

The most extensive as well as the most authoritative study of this question is that of Hertig and Sheldon based on a meticulous study of the case history and, more important, the tissues passed in 1,000 miscarriages. The senior author of that study, Dr. Arthur T. Hertig, is the distinguished Shattuck Professor of Pathology in Harvard University and a leading obstetrical pathologist. For years, he has asked obstetricians in Boston to send him the case histories as well as the tissues passed, when possible, in all cases of miscarriage which came under their care; and this series of 1,000 miscarriages stemmed from that source. In 489 cases, or almost half, the specimen of tissue passed contained either no embryo at all or a defective one, while in 96 cases the placenta showed abnormalities incompatible with continued function. In all 617 cases, or almost two-

thirds, the tissue specimens revealed such gross malformations that miscarriage was bound to occur sooner or later. In only a quarter of the specimens (265) was the product of conception normal.

Now, it so happened that in 13 of these 1,000 cases there was a history of physical trauma and fright preceding the miscarriage and in these the patient herself sincerely believed that this trauma and fright were responsible for the miscarriage. A particularly careful analysis of these 13 specimens showed that in five cases the embryo was either completely absent or very defective, while in four additional cases, the placenta showed malformations incompatible with proper function. These nine pregnancies would have miscarried irrespective of any trauma. In this entire series, there was only one case in which the authors believed that trauma was the causative factor. Since this case exhibits so well the criteria necessary to establish a diagnosis of traumatic miscarriage, let us review the case history.

This patient was a 22-year-old woman, whose last menstrual period occurred on November 24, 1937. Twelve weeks and two days later she experienced an automobile accident. This occurred while sitting in a stationary automobile which was struck from the rear by another car. The patient was excited and emotionally upset, although there was no mention in the clinical history of definite bodily injury. Seven hours after the accident the patient began to have painful uterine cramps followed in five hours by slight vaginal bleeding. Morphine, grains one-half, given in two divided doses one hour apart, failed to alleviate the uterine pain which, after six hours, became steady and was localized in the right lower quadrant. The patient experienced a chill at this time but had no elevation of temperature. She vomited once. The pulse was 82 and the blood pressure was 120/60. Physical examination, performed by an obstetrical consultant, showed a non-tender pregnant uterus of approximately four months gestational age. The uterus was, therefore, somewhat larger than the menstrual history would indicate.

The patient was admitted to the hospital 11 hours after the onset of uterine pains (labor). She soon ruptured her membranes spontaneously and delivered normal twins an hour later, 19 hours after the accident and 12 hours after the onset of labor.

Pathologic examination revealed an anatomically normal twin pregnancy whose fetuses each showed the expected degree of development for their menstrual age (12 weeks and three days).

It will be noted in this case that uterine cramps began seven hours after the accident and bleeding five hours after the cramps. The authors emphasized that when traumatic miscarriage does occur,

the time interval between the physical impact and the onset of bleeding and cramps is a matter of minutes and hours—an important criterion in the establishment of the diagnosis of traumatic miscarriage.

In many cases it is alleged that fright or psychic trauma, with or without physical impact, has caused a miscarriage. The idea that psychic trauma in the form of fright or mental anguish can cause miscarriage is deep-rooted in the minds of the populace at large and it is apparently endorsed by numerous legal authorities. As an extreme example of this type of case, let us consider *Harpole vs. Montgomery Ward*, a recent Baltimore case (U. S. District Court, Baltimore, No. 5308).

Mrs. Harpole, a woman previously suspected of being a shoplifter, visited the fur department of the Montgomery Ward store in Baltimore ostensibly to purchase a fur coat. The fur department is located on the first floor near the front door of the store. Mrs. Harpole was accompanied by a little girl, nine years old. After Mrs. Harpole had tried on several coats, and while the saleslady had gone to get another coat to show her, it was suddenly discovered that Mrs. Harpole and the little girl were missing. Missing also was the expensive fur coat which Mrs. Harpole had been trying on at the time the saleslady had left her.

A few minutes later, Mrs. Harpole wearing the fur coat and with the little girl in hand, was seen rushing out of the front door. But she was spotted by a store detective, who recognized Mrs. Harpole because of previous dealings with her as a shoplifter. The store detective made chase, apprehended her, and brought her back to the head store detective who promptly put her under arrest.

Weeping bitterly and proclaiming hysterically her innocence, Mrs. Harpole maintained that while trying on the coat she had seen the little girl running out the front door of the store and, fearful that she would go into the busy street in front and forgetful of the fur coat, she dashed after the child. "I was excited," said Mrs. Harpole. Although her story did not jibe at all with that of the store detective and clerks, she was acquitted after a jury trial.

It now developed that four days after the arrest in Montgomery Ward, Mrs. Harpole suffered a miscarriage, and on the grounds that the miscarriage had been caused by the humiliation and mental anguish associated with the unjust arrest, she brought suit against Montgomery Ward for \$5,000. On first trial of the case, the plaintiff was awarded \$2,500, but the defense showed a mistrial and when the case came to court a second time it was decided in favor of Montgomery Ward.

In the group of medicolegal cases in which physical injury has allegedly resulted from mental disturbance, miscarriage looms large; Prosser indeed states that miscarriage appears so frequently in these cases that it has come to typify them. Green in his review, "Fright Cases," points out that "with few exceptions, recoveries [recovery at law] have been restricted to women and for the most part to pregnant women." Moreover, the concept that fright causes miscarriage seems to have been put in that category of facts "which everybody knows." Thus Bohlen and Polikoff, in their review of "Liability in New York for the Physical Consequences of Emotional Disturbance," write as follows: "It may be that a distinction might properly be drawn between those effects of fright or shock which the common experience of the ordinary man recognizes as likely to result therefrom, such as a miscarriage after a severe fright, and those obscure nervous disorders as to which even medical experts may and do not agree." The factual, obstetrical evidence, of course, as set forth in the study of Hertig and Sheldon cited above, is strongly against the viewpoint that fright can cause miscarriage. In this connection I have asked myself and would ask you what would be the highest degree of fright, terror and mental anguish to which a woman, pregnant or otherwise, could be subjected? Suppose that a woman while held by Japanese soldiers saw her husband and her children bayoneted to death. This happened to countless Philippine women in Manila, many of whom were pregnant. Suppose, as occurred in the London bombings, a woman saw her children dismembered by falling timbers; and suppose further that thousands of English women, in constant dread of just such catastrophes, sat night after night through those terrifying bombings.

Now, there is factual evidence that many of these Philippine and English women who experienced these ghastly atrocities became mentally deranged but our question is: Did many of them who were pregnant miscarry? What was the incidence of miscarriage in Manila and in London during those days when women everywhere were subjected to constant fear, punctuated by acute periods of actual terror and violence. In an attempt to secure an answer to this question I have written to three professors of obstetrics and gynecology who were in London at the time of the bombings and to the Professor of Obstetrics and Gynecology in the University of the Philippines. I asked them not only to give me their own opinions but to secure whatever evidence they could from hospital records and from the experiences of their obstetrical colleagues. Without exception everyone of this group replied stating that in his experience,

and as far as he could ascertain, there was no increase in miscarriage at the times mentioned. Because of the disruption of medical services and the loss of hospital records in these areas during World War II, it is impossible to adduce absolute proof that the frequency of miscarriage did not increase in association with the atrocities described. From the evidence at hand, however, it would seem improbable that there was any appreciable increase.

But at this juncture you may well wonder why the concept of miscarriage, as the result of physical or psychic trauma, is so deep-rooted in the minds of most people. The answer is not far to seek. Obstetrics, in the form of midwifery, is probably the world's second oldest profession. For countless centuries, until very recent times, it has been wholly in the hands of midwives who, for the most part, were an ignorant, dirty, superstitious and alcoholic lot. When anything went wrong with any of their cases they had to come forth with some explanation by way of self-exoneration, and, in the case of miscarriages, every conceivable cause was invoked. These old midwives' tales have been whispered down the centuries from one generation to another, and to this day most women believe that hanging curtains, washing the hair in cold water and eating heavily seasoned foods, as well as watermelons, will all cause miscarriage. But the honest truth, as of 1955, I have endeavored to lay before you.

Closely allied with the subject of traumatic miscarriage is that of prenatal injuries, a timely and growing field of litigation. However, since this subject was discussed *in extenso* at your meeting in Boston last year I shall, with your leave, omit it from the present discussion.

Another field with which the plaintiff's attorney may occasionally have contact is that of disputed paternity. This has been the issue in numerous cases in which the husband has been away from his wife, perhaps out of the country for ten or more months, and the legitimacy of the child born in his absence, or just after his return, is questioned. For purposes of orientation, let us recall that the average duration of pregnancy from the day of fruitful coitus to the birth of the child is, in round numbers, 270 days. It is common knowledge, however, that there is wide variation in this figure and pregnancies that extend to 300 days are not uncommon. Wells, in a case without any legal implications, has advanced convincing evidence to show that the duration of pregnancy was 320 days from coitus to birth. This duration, it will be noted, is 50 days beyond the average and is extremely rare. With these figures in mind, let us consider four recent decisions. All were attempts by the plaintiff (husband) to establish

adultery on the part of the defendant (wife), solely on the basis of an abnormal length of gestation.

1. *Gaskill vs. Gaskill* (English Probate Division, 21 A.I.R., 1451, 1921). In this English case, the Lord Chancellor found no evidence of adultery; therefore, the petition of the husband was dismissed owing to the failure of expert witnesses to disprove the pregnancy of 331 days, or 61 days beyond the average.

2. *Lockwood vs. Lockwood* (Supreme Court, Special Term, Queens County, 62 N.Y.S., 910, May 2, 1946). In this New York case, medical witnesses testified that in the light of present-day knowledge it could not be stated that a pregnancy of 355 days was impossible—that is, 85 days beyond the usual duration. The Court, accordingly, rendered judgment in favor of the defendant and dismissed the complaint.

3. *Wood vs. Wood* (Divisional Court, England, D.C., 1947). Lord Merriman in the Divisional Court stated: "I absolutely decline on the information before us in this case to state that the period of 346 days is on the wrong side of any line that can possibly be drawn." And the complaint was dismissed.

4. *Preston-Jones vs. Preston-Jones*. (House of Lords, England, December 1949). The husband petitioned for divorce on the grounds of adultery, since the date of the last intercourse with the defendant would extend the total length of gestation to 360 days, or 90 days beyond the average period. The divorce commissioner dismissed the husband's petition and the Court of Appeals directed two re-hearings, before judgment was finally rendered in favor of the husband, granting a divorce.

In sum, the courts have been extremely lenient in these cases of disputed paternity based on abnormal length of gestation and have apparently preferred to overlook a little skulduggery rather than do an injustice to an innocent woman.

Conversely, abnormally short duration of pregnancy, is an occasional cause of legal action. For instance, in *Kissell vs. Kissell* (60 A (2d) 834, Pa., 1948), the plaintiff sued for divorce on the ground that the defendant was pregnant at the time of their marriage by an act of intercourse with a person other than the plaintiff, that such fact was concealed from the plaintiff and that the marriage was, therefore, procured by fraud. These allegations were based on the birth of a child 222 days after the marriage, that is, after a pregnancy about 50 days shorter in duration than the average. If this conception had occurred in wedlock one would suppose that the baby would have given evidence of its premature status at birth by a low birth weight and the behavior patterns of a premature infant. How-

ever, neither the birth weight nor the behavior of the infant indicated that the baby was other than a robust, full term infant. The issue in this case, therefore, was: What was the true gestational age of this baby? This case finally went to the Supreme Court of Pennsylvania in 1948 and was decided in favor of the defendant on the basis of testimony given by the family physician who had examined her early in pregnancy.

In many cases of disputed paternity, blood incompatibility tests have been introduced to rule out this or that man as the father. As was true in the widely publicized case of *Barry vs. Chaplin*, the courts have been hesitant to accept this type of evidence on the basis that laboratory error is always a possibility and because of certain precedents.

The troublesome and vexing newcomer in this field of disputed paternity is, of course, artificial insemination, that is, when seminal fluid other than that of the husband is used. On December 13, 1954, a Superior Court in Chicago rendered a decision to the effect that children resulting from artificial insemination, using a donor other than the husband, are illegitimate and that such procedure is contrary to public policy and good morals and constitutes adultery on the part of the mother, when done with or without the husband's consent. This decision has given rise to much acrimonious debate and has focused attention on the countless legal problems which this procedure might conceivably create. The basic questions are two in number: First, is the procedure lawful? Second, and of equal importance: Is the child so conceived legitimate? Can the doctor and the donor, in addition to the wife, be found guilty of adultery? In states in which adultery is indictable by statute, is artificial insemination (adultery by the Chicago decision) a criminal offense? If so, is the physician performing the act an accessory to a crime? Is fraud perpetrated or an illegal act committed by executing a birth certificate which states that the mother's husband is the father of the child—a known falsehood? Does the donor have an obligation to the child if one results? Does the donor, under any circumstances, have rights of inheritance from the child? Is the child of such artificial insemination an heir of his mother's husband's ancestors? What is the physician's responsibility in selecting a donor? What is the physician's responsibility if the resulting offspring should happen to be abnormal? As pointed out by the *Journal of the American Medical Association*, the limit to such questions depends only on the imagination, knowledge and intellectual curiosity of the inquirer.

To show that the courts do not agree on the legitimacy of infants born from artificial insemination, the New York case of *Strnad vs. Strnad* (78 N.Y.S.

(2d) 390, N.Y., 1948), may be cited. The plaintiff wife filed a motion to determine the defendant husband's right to visit the minor child of the two parties, the couple having been divorced. Several years previously, and with the defendant's consent, the plaintiff was artificially inseminated by the semen from a donor unknown to either of them and the child consequently was not the offspring of the defendant. The court held that the child had been potentially adopted or semiadopted by the defendant. In any event, said the court, insofar as this defendant is concerned, and with particular reference to visitation, he is entitled to the same rights of those acquired by a foster parent who has formally adopted a child, if not the same rights as those to which a natural parent in the circumstances would be entitled. Furthermore, said the court, assuming again that the plaintiff was artificially inseminated with the consent of the defendant, this child is not an illegitimate child. Indeed, logically and realistically, the situation is no different from that pertaining in the case of a child born out of wedlock who is by law made legitimate on the marriage of the interested parties. The court said that it would not pass on the legal consequences insofar as property rights are concerned in a case of this character, nor would the court express an opinion on the propriety of procreation by the medium of artificial insemination. The latter problem, particularly, said the court, is in the field of sociology, morality and religion. Accordingly, the defendant was granted the right to visit the minor child at certain specified times.

To turn now to another phase of forensic obstetrics, the operation of sterilization has widespread legal implications. In a recent Pacific Coast case, suit was brought against a nationally known obstetrician and gynecologist on the following grounds. The plaintiff, having suffered from high blood pressure for many years, had tubal sterilization performed, at her and her husband's request and with the approval of the obstetrician and gynecologist, in order to spare her the well-established hazard of future childbearing in the presence of hypertension. The operation proved a failure in that the plaintiff became pregnant a year or so later and, unfortunately, gave birth to a malformed child. While it was not alleged that the malformation of the infant was directly related to the failed sterilization, the child would not have been born at all had the operation been successful and so, indirectly at least, the failure of the operation was held responsible for the expense and heartache caused by this abnormal child.

Now, with due sympathy to the plaintiff, it is common knowledge to all obstetricians and gynecologists

that sterilization operations on women, as well as on men, are notoriously likely to fail even in the best circumstances. Our own record at the Johns Hopkins Hospital, where we have had extensive experience with tubal sterilization in women in over 2,000 cases, shows a failure rate of one in about 200 operations. Statistics from other hospitals show similar figures. There is indeed no operation for sterilization of women known, with the exception of removal of both ovaries, which is certain in efficacy. Failure of the procedure, therefore, is not evidence of an improperly performed operation. Because of these circumstances, hospital permissions for this operation should be worded in such a manner that it is perfectly clear to the woman and her husband that there is always some likelihood of failure and a subsequent pregnancy. In our own permission form we refer to the operation simply as one which "may prevent further pregnancies." Conversely, many cases have been brought, of course, because the surgeon at operation removed the fallopian tubes without proper permission. Better worded operative permits are meeting this situation. Then there are cases in which the wife has brought action against her husband because he voluntarily had himself sterilized without her permission. Sometimes, such operations on the male may fail and lead to accusations of adultery by the husband in the event that the wife becomes pregnant.

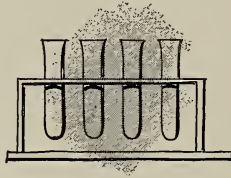
Finally, in regard to alleged malpractice in obstetrics: When the broad scope of forensic obstetrics is surveyed, including criminal abortion, traumatic abortion, prenatal injuries, disputed paternity, artificial insemination, various questions related to sterilization, and other topics, malpractice suits constitute only a small fraction of the litigation in this sphere of medicine. Nevertheless, over the years a goodly number of such cases have come to my attention, either locally in Baltimore or through letters from attorneys and doctors scattered throughout the country. I always endeavor to study these cases carefully and without prejudice, to the end that I can give the inquiring lawyer or doctor an honest opinion. I have many times sided with the plaintiff and in one case even played a small part in securing a settlement of \$128,000 for a certain Pacific Coast plaintiff. On the other hand, I must say that four out of five malpractice cases that come to my attention appear to be without merit. In that event, I always write back to the lawyer or doctor and try to explain in detail specifically why I think the case is without merit. Most often the reason is lack of any real evidence of proximate cause. Negligence can sometimes be proved without great difficulty, but to demonstrate beyond peradventure that that negligence was the proximate cause of the injury at question is often impossible. In my opinion, indeed, in four out of

five of these cases no such causal relationship actually existed.

Since I state that I find four out of five of these malpractice cases in obstetrics without merit, it probably will be said of me that I am biased in favor of the defense and the insurance companies. I am not biased in their favor and, I must say quite bluntly at the same time, that I am not biased in favor of the plaintiffs' attorneys. I *am* biased, however, in favor of one person, the person to whom I have given all my working hours for 30 years, and that is, the mother. I want the mother to get a square deal regardless of the interests of the defense attorneys, the insurance companies or the plaintiffs' attorneys. If she, or her pregnancy, has actually suffered injury as the definite result of anyone's negligence or incompetence, I will be the first to befriend her, even on the witness stand. If, on the other hand, she is mistaken about the genesis of her injuries, as she may honestly be, I want her to receive sympathetic but correct information. *I do not want her misled by plaintiffs' attorneys uninformed in obstetrics.* Ungracious as this statement may seem, it is the *raison d'être* not only of most alleged malpractice in obstetrics but of almost all traumatic miscarriage cases. It seems to me incredible that you—members of a great and learned profession as you

are—should so often be the victims of incorrect obstetrical advice.

How can you get sound, unprejudiced advice on any given obstetrical case and not old midwives' tales? My first suggestion would be to lay all the details of your case, by letter, before the professor of obstetrics and gynecology in your nearest medical school. Tell him (1) that his reply will be held in the strictest confidence and that you will not, under any circumstance, quote it to anyone; (2) that he will not be asked to serve as an expert witness, and (3) that you will follow his advice explicitly. Go to the top, in other words, for your advice and see what happens. I have great confidence in the integrity and judgment of my brethren in the specialty of obstetrics and gynecology, and know you will receive honest answers. It would be my hope that in the course of time the American Academy of Obstetrics and Gynecology, made up of some 3,500 specialists in our field, will form a committee to meet this very problem. But in any event, the great need is a closer rapport between obstetricians and plaintiffs' attorneys, more mutual confidence and understanding. Obstetricians cannot hope to know the law and plaintiffs' attorneys cannot hope to know obstetrics. Therefore, let us get together more often for exchange of thoughts.



In Memoriam

COZBY, HAROLD OTIS. Died in San Diego, August 28, 1956, aged 54, of coronary thrombosis. Graduate of the University of Texas School of Medicine, Galveston, 1924. Licensed in California in 1946. Doctor Cozby was a member of the San Diego County Medical Society.



FISHER, HAROLD L. Died in San Fernando, June 26, 1956, aged 43, of tuberculosis. Graduate of the University of Oregon Medical School, Portland, 1942. Licensed in California in 1942. Doctor Fisher was a member of the San Diego County Medical Society.



GUENTHER, LEO PETER. Died in Los Angeles, August 22, 1956, aged 58, of uremia. Graduate of Western Reserve University School of Medicine, Cleveland, Ohio, 1923. Licensed in California in 1926. Doctor Guenther was a member of the Los Angeles County Medical Association.



HIBBEN, J. SEVERY. Died in Pasadena, September 30, 1956, aged 68. Graduate of the College of Physicians and Surgeons, Los Angeles, 1914. Licensed in California in 1914. Doctor Hibben was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



ISEMINGER, SIDNEY W. Died in Bakersfield, September 29, 1956, aged 41. Graduate of the University of Southern California School of Medicine, Los Angeles, 1941. Licensed in California in 1941. Doctor Iseminger was a member of the Kern County Medical Society.



JONES, ISAAC H. Died in Los Angeles, September 7, 1956, aged 75. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1906. Licensed in California in 1920. Doctor Jones was a member of the Los Angeles County Medical Association.



KNAPP, EDWARD VOLNEY. Died in San Rafael, September 28, 1956, aged 78. Graduate of Cooper Medical College, San Francisco, 1907. Licensed in California in 1908. Doctor Knapp was a retired member of the Marin County Medical Society and the California Medical Association, and an associate member of the American Medical Association.



KUHN, ORTA EDWARD. Died in Pasadena, September 3, 1956, aged 74, of myocardial infarction. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1917. Licensed in California in 1917. Doctor Kuhn was a retired member of the Ventura County Medical Society and the California Medical Association, and an associate member of the American Medical Association.



MCLEOD, FREDERICK L. Died in Hollywood, August 24, 1956, aged 77, of subarachnoid hemorrhage. Graduate of the College of Physicians and Surgeons, Baltimore, Maryland, 1907. Licensed in California in 1924. Doctor McLeod was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

RAHMAN, LINCOLN. Died in Los Angeles, August 11, 1956, aged 52, of multiple injuries received in an automobile collision. Graduate of Cornell University Medical College, New York, New York, 1932. Licensed in California in 1946. Doctor Rahman was a member of the Los Angeles County Medical Association.



SCHIFFBAUER, HANS E. Died in Los Angeles, September 17, 1956, aged 73, of heart disease. Graduate of the University of Illinois College of Medicine, Chicago, 1907. Licensed in California in 1920. Doctor Schiffbauer was a member of the Los Angeles County Medical Association.



SEVENMAN, GEORGE WILLIAM. Died in San Mateo, August 31, 1956, aged 82, of pulmonary embolus. Graduate of Cooper Medical College, San Francisco, 1894. Licensed in California in 1895. Doctor Sevenman was a retired member of the San Mateo County Medical Society and the California Medical Association, and an associate member of the American Medical Association.



SIMPSON, RUSSELL E., JR. Died in Arcadia, August 6, 1956, aged 40. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1942. Licensed in California in 1948. Doctor Simpson was a member of the Los Angeles County Medical Association.



STEPHENS, PHILIP HOWARD. Died in Los Angeles, September 7, 1956, aged 80. Graduate of the Washington University School of Medicine, St. Louis, Missouri, 1899. Licensed in California in 1911. Doctor Stephens was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.



STEWARD, W. BENJAMIN. Died in Burlingame, August 24, 1956, aged 76, of coronary occlusion. Graduate of the University Medical College of Kansas City, Missouri, 1908. Licensed in California in 1939. Doctor Steward was a member of the Los Angeles County Medical Association.



THOMSON, HERBERT S. Died in Corte Madera, September 7, 1956, aged 73, of cancer of the esophagus. Graduate of Johns Hopkins University School of Medicine, Baltimore, Maryland, 1909. Licensed in California in 1913. Doctor Thomson was a retired member of the San Francisco Medical Society and the California Medical Association, and an associate member of the American Medical Association.



WADDELL, WILLIAM EVERETT. Died in Los Angeles, August 24, 1956, aged 91, of pulmonary embolism and adenocarcinoma of the prostate. Graduate of Pulte Medical College, Cincinnati, Ohio, 1887. Licensed in California in 1895. Doctor Waddell was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

CALIFORNIA MEDICAL ASSOCIATION

Annual Meeting

Ambassador Hotel

LOS ANGELES

April 28 - May 1, 1957

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted to the appropriate section secretary (see list on this page) no later than November 19, 1956.

Scientific Exhibits

Space is available for scientific exhibits. If you would like to present an exhibit, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association no later than December 1, 1956. (No exhibit shown in 1956, and no individual who had an exhibit at the 1956 session, will be eligible until 1958.)

SCIENTIFIC PAPERS

SCIENTIFIC EXHIBITS

PLANNING MAKES PERFECT
AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

ALLERGY William J. Kerr, Jr.
711 D Street, San Rafael

ANESTHESIOLOGY Howard S. Downs
332 North Glendale Avenue, Glendale 6

DERMATOLOGY AND SYPHILOLOGY . . Edwin M. Hamlin
2932 North Fresno Street, Fresno

EAR, NOSE AND THROAT Seymour Brockman
2007 Wilshire Boulevard, Los Angeles 57

EYE Harold B. Alexander
14 West Valerio Street, Santa Barbara

GENERAL PRACTICE Thomas N. Elmendorf
Masonic Building, Willows

GENERAL SURGERY W. Kenneth Jennings
233 West Pueblo Street, Santa Barbara

INDUSTRIAL MEDICINE AND SURGERY . . Earle T. Dewey
600 Stockton Street, San Francisco 20

INTERNAL MEDICINE Donald W. Petit
960 East Green Street, Pasadena 1

OBSTETRICS AND GYNECOLOGY . . . Keith P. Russell
511 South Bonnie Brae, Los Angeles 57

ORTHOPEDICS Raymond M. Wallerius
2909 J Street, Sacramento 16

PATHOLOGY AND BACTERIOLOGY . . Dominic A. DeSanto
Mercy Hospital, San Diego 3

PEDIATRICS Sidney Rosin
6230 Wilshire Boulevard, Los Angeles 48

PSYCHIATRY AND NEUROLOGY . . . Howard A. Black
2901 Capitol Avenue, Sacramento 16

PUBLIC HEALTH James C. Malcolm
15000 Foothill Boulevard, San Leandro

RADIOLOGY Stanford B. Rossiter
1111 University Drive, Menlo Park

UROLOGY Edmund Crowley
1930 Wilshire Boulevard, Los Angeles 57



WOMAN'S AUXILIARY

TO THE CALIFORNIA MEDICAL ASSOCIATION

The Year Ahead

THE Annual Fall Board Meeting and Conference of the Woman's Auxiliary to the California Medical Association was held September 25 to 27 at the Huntington-Sheraton Hotel in Pasadena. This meeting, held each year in September, is a combined statewide board meeting of the entire governing board of the Auxiliary and a workshop for the presidents and presidents-elect of the 33 component county auxiliaries. It was gratifying to have 28 of the 33 county presidents on hand and over half of the presidents-elect.

The Conference is set up in panel form covering all of our departments, with suggestions and information for the presidents to take back to their counties for the year's activities.

Mrs. Robert Flanders, president of the Woman's Auxiliary to the American Medical Association, was our guest. She and Dr. Flanders came out from New Hampshire especially for the Conference, and Mrs. Flanders' suggestions and information added greatly to the success of the meeting. Many things pertinent to our part in furthering of the plans of the American Medical Association were discussed and we believe that our program will be greatly strengthened this year.

The National Auxiliary has added safety to its chairmanships and we are discussing whether or not we shall encompass this branch in our departments here in California. We know, of course, that the greatest portion of our fatal accidents occur in the home, and, certainly, helping to decrease loss of life is very close to us, so it is possible that in the years ahead we in California will wish to include safety in our activities. However, for the present we

are making a survey of each of the counties to determine whether or not there is sufficient interest in safety to warrant our incorporating it in our plans.

Nurse recruitment will play a very large part this year, as it always does, in our county projects and we hope to increase our recruitment materially in 1957.

At this particular time we are stressing the necessity of our individual members being active in the coming important election. While we take no part in partisan politics as an organization, as physicians' wives and American women we feel very keenly the responsibility as well as the privilege of having a part in any and all elections. Many of our members are acting as registrars of voters and have done yeoman service in registering physicians and their staffs throughout the state. Many of the women serve on election boards and in many other important capacities.

At Christmas time we will lay considerable emphasis on Physicians' Benevolence, for this seems a golden opportunity to express our appreciation for services rendered by those of our physicians who have become incapacitated or are unable to carry on in their chosen field. We do not hold regular meetings in December as a rule and at the holiday time our thoughts turn to spiritual services, which happily include kindness to our own.

Each of the county presidents has returned to her county with new material, new ideas, and new enthusiasm for her Auxiliary year. We earnestly trust that this enthusiasm may be productive of tangible results to the California Medical Association.

MRS. PAUL C. BLAISDELL, *President*
Woman's Auxiliary of the
California Medical Association

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

Dr. Fred W. Beck of Oakland was presented the Golden Head-Mirror Honor Award of the American Rhinologic Society "for meritorious sharing in the service of rhinology" at the second annual banquet of the society, which was held in Chicago, October 13.

The second annual meeting and seminar of the society was attended by more than 100 specialists in diseases of the nose, an official announcement said.

KINGS

Dr. Paul L. Murphy of Hanford recently was appointed temporary health officer of Kings County to succeed Dr. Donald E. Upp in that position.

LOS ANGELES

Appointment of eight physicians to head various program activities of medical research, community services and education aimed at reducing the toll of diseases of the heart and circulatory system was announced recently by Dr. Edward M. Shapiro, president of the Los Angeles County Heart Association.

These chairman are: Lewis T. Bullock, research committee; Frank E. Davis, artery bank; Maurice Lipkis, diets and dietary products; Arthur Edwardes, rehabilitation; Arthur Feinfeld, public education; Edward Phillips, professional education and symposium; Harold Miller, cardiac resuscitation, and Rea Schneider, heart of the home.

* * *

The College of Medical Evangelists recently announced the addition of seven physicians to the faculty of the medical school: Harold L. Engal, instructor in anesthesiology; Frederic W. Farrar, assistant professor of medicine; Robert Q. Quinn, instructor in obstetrics and gynecology; Milton Rosenthal, assistant professor of pathology; Ross H. Seasley, Jr., instructor in pathology; J. Earl Thomas, visiting professor and chairman of the department of physiology; and William E. Wilson, instructor in ophthalmology.

In addition two promotions were announced: Dr. Edson Nichols has been appointed professor and chairman of the department of obstetrics and gynecology, and Mr. Ralph N. Highsmith, a Los Angeles attorney, associate professor of legal medicine, has been named acting chairman of that department.

SAN FRANCISCO

A dinner of the San Francisco chapters of the Pan American Medical Association and the Pan American Society was given October 12 at the Fairmont Hotel in honor of the consular representatives of the Latin-American nations. Dr. Charles Pierre Mathé presided and the Hon. André Rouzier, Consul General of Haiti and vice-president of the Asociación Consular de las Naciones Americanas, spoke on the discovery of America by Columbus.

SAN MATEO

Dr. Frances Baker of San Mateo was elected secretary for 1956-57 of the American Congress of Physical Medicine and Rehabilitation at the recent annual meeting of the organization in Atlantic City, N. J.

GENERAL

More than 200 members of the California Society of Internal Medicine met at the La Playa Hotel, Carmel, September 28 to 30, for the annual session of the organization. Dr. William C. Mumler, Los Angeles, was elected president and Dr. Robert L. Smith, Jr., San Francisco, vice-president. Dr. Claude P. Callaway, San Francisco, was reelected secretary-treasurer.

New members on the Council are Dr. Edward Shapiro, Beverly Hills, and Dr. Joseph F. Sadusk, Jr., Oakland. Reelected were Dr. Thurman K. Hill, Santa Barbara; Dr. Walter P. Martin, Long Beach; Dr. Paul V. Morton, San Jose, and Dr. James H. Thompson, San Francisco.

* * *

Cash awards given annually by the Council on Undergraduate Medical Education of the American College of Chest Physicians for the three best contributions prepared by undergraduate medical students on any phase in the diagnosis and treatment of chest diseases (heart and/or lungs) will be increased for the 1957 contest. The first prize will be \$500; second prize will be \$300, and third prize \$200. Each winner will also receive a certificate of merit.

The winning contributions will be selected by a committee of chest specialists and will be announced at the 23rd Annual Meeting of the American College of Chest Physicians to be held in New York City, May 29 to June 2, 1957. The deadline for entries is April 10, 1957. Complete information may be obtained from the executive director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11.

* * *

The Trustees of the Caleb Fiske Prize of the Rhode Island Medical Society announce as the subject of this year's essay competition, "The Present Day Treatment of Infertility." Essays must be typewritten, double spaced. They should not exceed 10,000 words and must be submitted by January 10, 1957. A cash prize of \$350 is offered.

Complete information regarding the regulations may be obtained from the secretary, Caleb Fiske Fund, Rhode Island Medical Society, 106 Francis Street, Providence 3, Rhode Island.

* * *

Cardiology, mental disease, and the treatment of eye disorders have been selected as topics for the 1957 Schering Award Contest, open to medical students in the U. S. and Canada, according to Dr. Chester B. Szmal, chairman of the award committee. At the same time it was announced that a total of \$4,500 in cash prizes will be awarded—double the amount offered in any previous year. A \$1,000 first prize and a \$500 second prize will be awarded for the best papers on each of the three selected topics.

The three subjects for 1957 are: (1) Incidence of Various Types of Cardiovascular Diseases by Age Group in the Male and Female. (2) Recent Trends in Corticosteroid Therapy for Ocular Disorders. (3) Recent Advances in the Biochemical Aspects and Treatment of Mental Disease.

Literature and entry forms are being distributed in medical schools, it was said. Students interested in participating should submit their entry forms by January 1, 1957.

Times and places of six sectional meetings of the **American College of Surgeons**, to be held in conveniently located cities in the United States, Canada and Puerto Rico during 1957, were announced recently as follows: San Juan, Puerto Rico, January 16 to 18; New Orleans, February 4 to 7; Seattle, February 28 to March 2; Washington, D. C., March 18 to 20; Toronto, Ontario, March 25 to 27, and St. Paul, April 8 to 10.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education assemblies and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Obstetrics and Gynecology. Friday and Saturday, November 16 and 17. Eleven hours. Fee: \$40.00.

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Newer Diagnostic and Therapeutic Aspects of Gastrointestinal Diseases. November 15 and 16. Fifteen hours.*

Symposium on Cataracts. December 5, 6, 7. Twenty hours.*

New Diagnostic and Therapeutic Techniques. December 12, 13, 14. Twenty hours.*

Conference on Dermatology. January 11 and 12, 1957. Fourteen hours.*

Iron in Clinical Medicine (International Symposium). January 28 and 29, 1957. Sixteen hours.*

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: \$250.00 per month.

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MOntrorse 4-3600, Ext. 665.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Home Course in Electrocardiography. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: \$100.00.

*Fees to be announced.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: \$30.00. (Each session all-inclusive.)

Conferences and Clinics in Endocrinology. Hotel Statler and Los Angeles County Hospital. All day, each day, November 29, 30 and December 1. Fee: \$65.00.

Conferences and Live Clinics in Diseases of the Liver and Biliary Tract. All day, each day, Friday, Saturday and Sunday, March 22, 23, and 24, 1957. Hotel Statler and Los Angeles County Hospital. Fee: \$65.00.

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApiital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Surgical Anatomy: Dissection, Demonstration and Lectures, Thorax, Abdomen and Pelvis. Mondays and Wednesdays, January 14 through April 17, 1957. 104 hours.

Varicose Veins, the Peripheral System. Tuesdays, January 15 through February 26, 1957. Fourteen hours.

Surgical Anatomy: Demonstration and Lectures, Thorax, Abdomen and Pelvis. Wednesdays, January 16 through April 17, 1957. Twenty-six hours.

Management of Infertility. Thursdays, January 17 through March 7, 1957. Twelve hours.

Operative Surgery. Wednesdays, March 20 through June 5, 1957. Thirty hours.

Gynecology. Wednesdays, March 27 through May 29, 1957. Ten hours.

Thoracic Surgery. Wednesdays, April 24 through May 15, 1957. Eight hours.

Contact: Chairman, Section on Graduate and Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANGelus 9-9131, Ext. 205.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE COURSES

AUDIO DIGEST FOUNDATION, a nonprofit subsidiary of the C.M.A., now offers (on a subscription basis) a series of hour-long tape recordings designed to keep the physician abreast of current happenings in his particular field. Composed of practice-useful abstracts from 600 leading journals, with short lectures and editorial comments from prominent physicians, Audio Digest offers programs covering general practice, surgery, internal medicine, obstetrics and gynecology, and pediatrics.

Contact: Claron L. Oakley, editor, 6767 Sunset Blvd., Hollywood 28, Calif.

WEST COAST CIRCUIT in cooperation with University of Southern California School of Medicine:

San Luis Obispo—Mondays, February 18, 25, March 4, 11, 1957.

Santa Maria—Tuesdays, February 19, 26, March 5, 12, 1957.

Santa Barbara—Wednesdays, February 20, 27, March 6, 13, 1957.

POSTGRADUATE INSTITUTES, 1957

SOUTHERN COUNTIES (Riverside, Orange and San Bernardino) in cooperation with University of California, Los Angeles, February 14 to 15, 1957, Disneyland Hotel, Anaheim. Chairman: H. C. Barron, M.D., 4030 Eighth Street, Riverside.

WEST COAST COUNTIES in cooperation with University of Southern California, March 7 to 8, 1957, Golden Bough Theater and La Playa Hotel, Carmel. Chairman: Edwin W. Tucker, M.D., 1073 Cass Street, Monterey.

SAN JOAQUIN COUNTIES in cooperation with University of California, San Francisco, March 21 to 22, Hotel Californian, Fresno. Chairman: Richard H. Whitten, M.D., 2912 Fresno Street, Fresno.

NORTH COAST COUNTIES in cooperation with Stanford University, April 11 to 12, 1957, Odd Fellows Hall, Santa Rosa. Chairman: Robert S. Quinn, M.D., 185 Sotoyome Avenue, Santa Rosa.

SACRAMENTO VALLEY COUNTIES in cooperation with College of Medical Evangelists, June 20 to 21, 1957, Tahoe Tavern, Lake Tahoe. Chairman: C. M. Blumenfeld, M.D., 4700 Parkridge Road, Sacramento.

Contact: One of the chairmen listed above, or Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill Street, Los Angeles 13.

Medical Dates Bulletin

NOVEMBER MEETINGS

INTERIM SESSION, AMERICAN COLLEGE OF CHEST PHYSICIANS, Benjamin Franklin Hotel, Seattle, Washington, November 25 to 26. *Contact:* Murray Kornfeld, executive director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

CALIFORNIA CONFERENCE OF LOCAL HEALTH OFFICERS semi-annual meeting, Sacramento, November 27 to 28. *Contact:* Donald G. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley.

1957 MEETINGS

AMERICAN BOARD OF SURGERY examination, Part II, Los Angeles, January 14 and 15; San Francisco, January 17 and 18.

SOUTHERN CALIFORNIA CHAPTER, AMERICAN COLLEGE OF SURGEONS, Biltmore Hotel, Santa Barbara, January 18, 19, and 20. *Contact:* Max R. Gaspar, M.D., Secretary-Treasurer, 211 Cherry Avenue, Long Beach 2.

CALIFORNIA RURAL HEALTH COUNCIL Third Annual Conference on Rural Health, January 25 and 26, Hotel Senator, Sacramento. *Contact:* Glenn Gillette, associate director, Public Relations, California Medical Association, 450 Sutter Street, San Francisco.

AMERICAN FEDERATION FOR CLINICAL RESEARCH, Wednesday afternoon and Thursday morning, January 30 to 31. Golden Bough Theater and La Playa Hotel, Carmel.†

†For information *contact:* Joseph Ross, M.D., associate dean, UCLA Medical Center, Los Angeles 24.

‡*Contact:* Major Max E. Knickerbocker, MSC, Chief of Education and Training Branch, Letterman Army Hospital, San Francisco.

WESTERN ASSOCIATION OF PHYSICIANS, Wednesday morning and Friday afternoon, January 30 and February 1, Golden Bough Theater, La Playa Hotel, Carmel.†

WESTERN SOCIETY FOR CLINICAL RESEARCH, Wednesday afternoon, Thursday and Friday mornings, Golden Bough Theater and La Playa Hotel, Carmel.†

Section on Diseases of the Chest, LOS ANGELES COUNTY MEDICAL ASSOCIATION and LOS ANGELES COUNTY TUBERCULOSIS AND HEALTH ASSOCIATION Sixth Biennial Postgraduate Course on Diseases of the Chest. All day each day January 31 to February 2 at Los Angeles County Medical Association, 1925 Wilshire Blvd., Los Angeles. *Contact:* David Salkin, M.D., Veterans' Hospital, San Fernando.

SOCIETY OF GRADUATE SURGEONS OF LOS ANGELES COUNTY Surgical Forum, March 4 to 8, Ambassador Hotel, Los Angeles. *Contact:* Wm. F. Roe, M.D., 14431 Hamlin St., Van Nuys, Calif.

COLLEGE OF MEDICAL EVANGELISTS SCHOOL OF MEDICINE Annual Alumni Postgraduate Convention. Refresher courses, White Memorial Hospital, March 10 and 11; Scientific Assembly, Biltmore Hotel, March 12 to 14, both in Los Angeles. *Contact:* Walter B. Crawford, managing director, Alumni Postgraduate Convention, 316 N. Bailey St., Los Angeles 33, or telephone: ANgelus 2-2173.

REGIONAL MEETING INTERNATIONAL COLLEGE OF SURGEONS, Santa Barbara, California, April 1 to 2. *Contact:* Ross V. Parks, M.D., 1930 Wilshire Blvd., Los Angeles 57.

LETTERMAN ARMY HOSPITAL "Surgery in Acute Trauma," 8 a.m. to 4:30 p.m., April 1 to 3.‡

UNITED STATES-MEXICO BORDER PUBLIC HEALTH ASSOCIATION Fifteenth Annual Meeting, April 9 to 12, San Antonio, Texas. *Contact:* Donald G. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley.

VALLEY CHILDREN'S HOSPITAL Spring Clinics, Roosevelt High Auditorium, Fresno. *Contact:* Valley Children's Hospital, Millbrook and Shields Avenue, Fresno.

LETTERMAN ARMY HOSPITAL "Oral Surgery," 8 a.m. to 4:30 p.m., April 22 to 26.‡

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles, April 28 to May 1. *Contact:* John Hunton, executive secretary, 450 Sutter St., San Francisco 8, or Ed Clancy, director of Public Relations, 417 S. Hill St., Los Angeles 13.

CALIFORNIA HEART ASSOCIATION Annual Meeting Lafayette Hotel, San Diego, May 17, 18, and 19. *Contact:* J. Keith Thwaites, executive director, California Heart Association, 1428 Bush Street, San Francisco.

WESTERN BRANCH, AMERICAN PUBLIC HEALTH ASSOCIATION annual meeting, Lafayette Hotel, Long Beach, May 29 and June 1. *Contact:* Mrs. L. Amy Darter, Secretary-Treasurer, State Dept. Public Health, 2151 Berkeley Way, Berkeley.

IDAHO STATE MEDICAL ASSOCIATION 65th Annual Meeting, Sun Valley, June 16 to 19. *Contact:* Mr. Armand L. Bird, executive secretary, 364 Sonna Bldg., Boise, Idaho.

INFORMATION

The American Physician and The World Medical Association

The World Medical Association has become a strong factor in protecting and promoting the professional interests of the medical profession and the cause of world peace.

Now in its ninth year, W.M.A. is a federation of the most representative national medical association in each of 52 nations. These member organizations represent more than 700,000 physicians. The American Medical Association is a leading member of the World Medical Association.

Doctors of medicine the world over cherish the same basic ideals of conduct and the same devotion to the welfare of mankind. The World Medical Association is cultivating the common purposes of the profession. This growing community of interest is a source of strength to the physicians in every land.

Already, by solid accomplishments, the World Medical Association has earned the right to call itself "the international voice of organized medicine." Thanks largely to the United States Committee and similar supporting committees of physicians in other leading nations, W.M.A. has a well-tried constitutional structure, a small but efficient secretariat, and a trilingual journal whose worldwide influence and value to the profession are rapidly growing. The permanent office of the secretariat—which serves both the Association and the United States Committee—is located in the United States.

The membership of the United States Committee has been growing slowly but steadily. In 1955, the Committee reached its first important milestone of growth; a membership of 5,000 American physicians.

Even with this modest membership representing scarcely 3 per cent of American medicine, important achievements have been registered, many of which would have been impossible if the American pharmaceutical and related industries had not consistently matched the financial support given the United States Committee by its physician members.

Last year, 176 members of the United States Committee attended the Ninth General Assembly of the World Medical Association in Vienna. This privilege is available to members of national sup-

porting committees. There is unique inspiration, personal enjoyment and intellectual stimulus in meeting our colleagues from many lands, and in helping to formulate programs that may have incalculable benefits for the profession, and for the welfare of the world.

The World Medical Association assists traveling physicians by providing them with introductions to colleagues in other countries, by making speaking engagements for them abroad, by acquainting them with visiting doctors from other countries, and, of course, by sending the *World Medical Journal* to members of all national supporting committees.

In 1953, the World Medical Association sponsored the First World Conference on Medical Education, held in London. Representatives for many nations have reported concrete benefits from this epochal meeting in terms of better standards and practices in medical education in their countries. A Second World Conference on Medical Education is now being planned for 1959, to be held in the United States.

Two other World Medical Association accomplishments that have brought great credit to our profession and strengthened its solidarity throughout the world were the promulgation in 1948 of the Declaration of Geneva, comprising a modern restatement of the Hippocratic Oath, and the adoption in 1949 of an International Code of Medical Ethics.

The activities of W.M.A. in the field of social security are of particular interest to American physicians. They have revealed boldly and unmistakably the physician's inherent and universal need for freedom from third-party interference with the practice of medicine. Such activities should not only fortify but inspire the efforts of American medicine to solve our socioeconomic problems without resort to governmental subsidy or control.

On the international stage, the World Medical Association has endeavored to counter efforts of the International Social Security Association and the International Labour Organization to promote state medicine under social security programs. The World Medical Association has earned the respect of the International Labour Organization for its defense of the interests of medicine against the International Labour Organization Convention for Medical Socialization in 1952. Now the World Medical Association is attempting to wrest from the International Labour Organization the recognized world leadership in the field of occupational medicine.

The World Medical Association has engaged in efforts to protect medical research; to safeguard the National Pharmacopeias and the rights of individuals discovering new drugs and agents to name them.

The World Medical Association has served the profession by representing it in relation to the World Health Organization—the official health agency of the United Nations. In the attempt by WHO and other agencies to draft an International Code of Medical Law, W.M.A. has insisted that such a code be based upon ethical principles acceptable to the profession.

For all these activities, and for many more which demand our attention, additional funds are needed. Each new member not only contributes his nominal membership dues, but, more vitally, he lends his name and influence to the program of the W.M.A. and of its United States Committee.

America's world leadership challenges America's physicians to make the United States Committee a truly impressive and representative body of American physicians.

Every individual physician in the U. S. A. is eligible for membership in the United States Committee. Annual membership dues are \$10.00. The dues for Patron Members are \$100.00 or more. Many of our members regularly make contributions to the U. S. Committee, in addition to their annual dues. All such contributions to the United States Committee of the World Medical Association are tax deductible.

As the international voice of organized medicine, the World Medical Association is speaking for you. It is seeking to promote and protect your interests. You are urgently invited to help these efforts along, by joining the United States Committee, and participating in its work.

LOUIS H. BAUER, M.D.
Secretary-Treasurer
The World Medical Association

Care of Military Personnel AWOL

THE FOLLOWING LETTER to the editor of the *New England Journal of Medicine*, submitted by Brigadier General H. W. Glatly, Surgeon, Headquarters, First Army, and subsequently published in Volume 255, July 12, 1956, is reproduced in part as a matter of general interest to civilian physicians and civilian hospitals in this area.

"In a number of cases physicians and hospitals have accepted for emergency treatment members of the Army who were in a status of absent without official leave (AWOL). Upon subsequent submission of vouchers for payment, the physician or hospital has had to be informed that current regulations preclude the payment from public funds for medical treatment rendered military personnel in such a status.

"Upon the acceptance by a hospital or physician of a member of the military service (Army, Navy or Air Force), immediate report should be made to the nearest military facility of the illness or injury. This procedure should be accomplished whether the person is absent with or without official leave in order that his parent organization may be informed of his continued absence by reason of illness or injury. If he is in an AWOL status, the report of his location

and illness or injury constitutes a return to military control and, in effect, terminates his AWOL status. The government subsequently becomes responsible for payment of his medical care by civilian agencies. These statements apply to practically every situation except unusual cases in which a person is engaged in a criminal act or when unauthorized medical care is furnished for a condition that is not an emergency. Also, the assumption must be made that one service will act for the other in the matter of relaying the information to the parent organization.

"Statement of account for payment may be forwarded to the commanding officer, who will transmit them to their proper destination. The processing of an account involves a matter of weeks, but payment is certain when emergency medical care is rendered a bona fide member of the military service who is not AWOL and who is not engaged in a criminal act . . ."

It cannot be over stressed that early reporting of the individual to the proper military authorities is of the utmost importance.

Any inquiries concerning the subject discussed may be addressed directly to the Surgeon, Headquarters Sixth Army, Presidio of San Francisco, California.



THE PHYSICIAN'S *Bookshelf*

POLICE DRUGS—Jean Rolin, translated by Laurence J. Bendit. Philosophical Library, New York, 1956. 194 pages, \$4.75.

This book is an impassioned argument against the use of drugs, especially the barbiturates, and more particularly thiopental sodium (pentothal sodium) in efforts by police to secure legal evidence from a suspect. In the Introduction he states that once these drugs "come to be used outside the psychiatric clinic, in connection with courts of law, become simply police drugs. The moment methods of investigating the unconscious pass from the strictly medical and therapeutic sphere into the forensic, these drugs become prostituted into means of extortion, turn the skill of the (medical) expert into the work of a policeman, and destroy all chance of true justice being meted out."

The first two chapters give a history of the development of scopolamine as an alleged "truth serum," and the warning which medical experts have made against this use and the development of barbiturates and amphetamine for psychiatric purposes and their effects on the central nervous system. As would be expected in a book by a layman, there are errors or misunderstandings concerning the chemical and pharmacological nature of the drugs discussed. For example, methylamphetamine is described as the dextro-rotatory form of amphetamine.

The remaining six chapters give a history of police methods in obtaining or extorting confessions from the dark ages until the present. In Chapter 4 the case of Henri Cens was described. This unfortunate member of the French Police was accidentally shot in the frontoparietal, resulting in hemiplegia and aphasia. He was later accused of collaboration with the Germans in repressing the Resistance, but because of his aphasia was able neither to deny nor admit the accusation. Under thiopental he was reported to have uttered the one word "Oui" and therefore assumed to be malingering. Although eventually cleared of the accusation, Cens spent many months in prison, suffering from Jacksonian epilepsy, and repeatedly questioned by the police. The author over and over, with many repetitions of the idea in different guises and association points out "what an abuse torture is when used in search of a confession." He greatly fears the spread of authoritarian government by such means. "Pentothal is all the more to be feared in that it has come into a world in process of spiritual disintegration. The question of its use is identical with that of the safety of man in a dehumanized civilization." And again: "We are concerned with forensic medicine in a world already given over to power politics, to judicial systems which degrade. Inevitably, under these conditions, pentothal must become, if it is not already, one of a number of means open to the use of tyranny, whose claims are always increasing and whose methods, when exasperated, turn to pure savagery."

It is obvious that "pentothal" is simply a symbol used by the author in his crusade against what in the United

States of America would be called an invasion of the Bill of Rights of the Constitution. He decries the invasion of secrecy, the twisting of "privileged information" for uses of prosecution, the usurpation of the privileges of the bench by police methods. It is a book which should be read by medicolegal experts, attorneys, judges and police officials, as well as by everyone interested in maintaining personal freedom.

* * *

GYNECOLOGIC CANCER—Second Edition—James A. Corscaden, Ph.B., M.D., Professor Emeritus of Clinical Gynecology, College of Physicians and Surgeons, Columbia University, The Williams and Wilkins Company, Baltimore, 1956. 546 pages, \$10.00.

Corscaden's "Gynecologic Cancer" is a comprehensive compilation of data concerning various forms of genital cancer. The author introduces the subject with a discussion of the frequency, probability of occurrence, accessibility and curability of cancer in general; here, the effect of delay of diagnosis on the chance of curability is discussed at length. He then proceeds to diagnostic methods describing standard procedures and working tools, pointing out the advantages of some over others and the shortcomings of some. Next, cancer of the vulva, vagina, cervix, corpus, chorion, fallopian tube and ovary are discussed sequentially and in great detail. Special attention has been given to the still incompletely solved problem of carcinoma-in-situ and the various approaches to its evaluation and treatment in the nonpregnant and pregnant states. The treatment of each type of cancer is discussed in detail and the advantages of certain types of technique are described briefly. Cancer of the cervix receives the author's particular attention. Here, as in the chapter on cancer of the endometrium, the principle of irradiation is taken up in great detail and in plain language, well documented and equally well illustrated. The author presents the end-results, reported by various clinics, without bias but does not hesitate to make recommendations on the basis of his own long experience.

Each chapter goes into the genesis of the individual type of malignancy in an attempt to clarify present controversies over genetic, endocrine and environmental influences. The concluding chapters, dealing with the menopause in relation to cancer, the general management of the cancer patient and a lucid discussion of the nature of cancer, form a fitting conclusion to this readable and informative tome.

The issuance of a second edition only four years after its original publication speaks well for the author's ability to reach the reading medical-public. The present edition has been augmented with recent information and additional tables and illustration and as such takes its place with other authoritative works on cancer. Corscaden's "Gynecologic Cancer" is profusely documented from the world's medical literature and, as such, a most valuable reference book. The publishers, the Williams & Wilkins Company of Baltimore, Maryland, as usual, have turned out a fine job of printing and bookbinding.

LAUGHTER AND THE SENSE OF HUMOR—By Edmund Bergler, M.D. Intercontinental Medical Book Corp. in cooperation with Grune & Stratton, Inc., New York. 297 pages, \$5.00.

Many years ago James Thurber composed an essay on the importance of "Leaving Your Mind Alone." The author of this book is a psychoanalytic psychiatrist who believes not only in not leaving the mind alone, but in not even leaving laughter alone. He courageously and, at great length, analyzes the subject of laughter, wit and humor.

As examples of the author's style and method, we may quote a few paragraphs:

"The nine 'esthetic dead-end' theories of laughter came from the German esthetic school of the nineteenth century. With the exception of one of their number, Theodor Lipps, none of them contributed anything of value. (Max Eastman has collected these theories with a diligence worthy of a better cause.) They all take as their point of departure the deductions of Jean Paul Richter (1763-1825) as published in *Die Vorschule der Aesthetik* in 1804 under the pseudonym 'Jean Paul.' Humor, to Richter, represents not only art but ethics, and a philosophy of life. We laugh at the petty and inimical, he declares, contrasting it with the ideal of infinite sublimity. All things being petty, the tendency of laughter is to promote sympathy for mankind. When we laugh at other people's stupidity, we are lending them our own insight."

Interestingly enough, Richter assumes the existence of some kind of autonomy in jest: "The jest has no purpose other than its own being—the poetic bloom of its nettle does not sting, and one can scarcely feel the blow of its flowering switch full of leaves." He therefore opposes Hobbes' theory. Richter's own definition of humor as the fruit of a comparison between the petty and the sublime has a more realistic appendix, dealing with wit, "the disguised priest who marries all couples."

In discussing laughter in the adult sense, the author believes that wit is one of the techniques used by the ego to attack the superego. "This statement was later indirectly taken by L. Eidelberg ('A Contribution to the Study of Wit,' the *Psychoan. Review*, 32, 1; 1945), to subsume a scopophilic sideshow. Also utilizing the voyeuristic-exhibitionistic exchange mechanism (according to which both parts of scopophilia can be used as defense) as postulated by Eidelberg and myself in our joint study on depersonalization ('The Mechanism of Depersonalization,' *Int. Zeitschr. fuer Psychoan.*, 1935), the deduction reads something like this: In listening to a joke, the child in the listener plays the voyeur; via identification with the narrator, voyeurism is transformed into exhibitionism; since this change takes place under pressure of the superego, deception of the latter is a prerequisite. Otherwise, Eidelberg holds that real aggression is displayed in wit, a point which I dispute, the pseudoaggression, covering more deeply repressed psychic masochism, seems to me of prime importance for understanding the psychology of wit."

Later, in a chapter on the Four Pillars of The Sense of Humor, he observes: "There is a good deal of truth in Jekels' thesis, although a series of qualifications are necessary. First: The unconscious ego's attack is not a direct onslaught against the pater familias; it is aimed, rather, at the internal ego ideal, the enshrined intrapsychic images of the giants of the nursery, plus the child's own narcissism. Thus the attack is directed against the Daimonion, the antilibidinous section of the superego, which typically misuses the ego ideal for its torture purposes. That correction became necessary after Jekels and I published our theory on the development and structure of the superego in the already-mentioned 'Transference and Love.'"

In all, there are 13 chapters, an extensive series of footnotes and a good index. A metaphysician has been defined as a man who goes into a dark cellar at midnight, without a light, looking for a black cat that is not there. If we regard a sense of humor as a cat, reasonably black and with nine lives, we still doubt if it, he or she, could be detected by the laborious technique used by the author. However, the reviewer is not a psychoanalyst. There are a few tales in the book which lighten the otherwise heavy fare: "A woman consults an analyst. She explains tearfully, 'My family thinks I'm crazy. And why: because I like pancakes. Tell me, what's wrong with liking pancakes?' The analyst reassures her: 'Of course there's nothing wrong with liking pancakes. I like them myself.' 'You do,' cries the delighted patient. 'I'll give you some of mine—I have a whole bureau full of them.'"

* * *

THE CLINICAL CARE OF THE DIABETIC—James J. Short, M.D., F.A.C.P., Associate Professor of Medicine, School of Medicine, College of Medical Evangelists. San Lucas Press, Los Angeles, 1955. 84 pages, \$3.95.

This book makes no pretense of being "exhaustive or exhausting." It offers nothing new in the care of diabetes, though all the newest theories and opinions are mentioned in passing.

The author's attempt in this book is to be practical and concise. He reports his own opinions and techniques (with modifications or apologies here and there) as he has employed them in the successful care of many, many diabetic patients in the past 30 or more years.

Any attempt to make a simple, concise statement about an inherently complicated and incompletely understood disorder like diabetes is a bold, if welcome, effort. Such an effort is easier to criticize than to laud. There are, for instance, several references to a time-honored, and well worn out, theory that if the physician exercises sufficient caution in the care of diabetes he may expect the pancreas, sometimes, to recover. On the laudable side of the ledger is occasional reference to the fact that a diabetic patient is a person, not just a pile of chemicals. Some adjustment of chemical precision, it is advised, is necessary in the case of individuals who, by constitution, can not accept or understand the refinements of ideal discipline.

Compliance with the author's suggestions will provide adequate care for any diabetic patient. Any doctor who has been confused by the welter of contradictory opinions on the subject of diabetes and is looking for something to tie to would do well to anchor here.

* * *

VIRUS DISEASES AND THE CARDIOVASCULAR SYSTEM—A Survey—Ernest Lyon, M.D., Grune & Stratton, New York, 1956. 215 pages, \$5.75.

This monograph is an excellent compilation of existing knowledge on virus diseases and the cardiovascular system. An analysis of all types of viruses, their general properties, and the types of cardiac abnormalities which occur as a result of infection with them, is very comprehensively discussed. There is a pertinent bibliography following the discussions of each virus and the author has managed to compress a great deal of information in a most compact and readable manner. Many of the references are within the past two years and the work is up-to-date.

This book covers an aspect of cardiovascular disease not otherwise available and I believe it will prove of great interest to all physicians interested in internal medicine, as well as to pediatricians, microbiologists and cardiologists. It is, therefore, strongly recommended.

ELECTRODIAGNOSIS AND ELECTROMYOGRAPHY—
Some Clinical Applications of Electroneurophysiology—
Edited by Sidney Licht, M.D., Honorary Member, British
Association of Physical Medicine; Danish Society of Physical
Medicine, and the French National Society of Physical
Medicine; Elizabeth Licht, Publisher, 360 Fountain Street,
New Haven, Conn., 1956. 272 pages, 90 figures, \$10.00.

For those interested in the clinical or investigative application of electromyography this book will be a welcome and helpful guide in the office or laboratory. Within this small, compact volume the theory and technic of investigation in neuronal, muscular, and junctional disorders by means of electrical studies are presented in detail. The book will serve as a handy reference source even for those casually in contact with electromyographic studies in view of its rather clear and straightforward descriptions of all the applications as well as the limitations of the method.

Because of the multiplicity of contributors one finds a certain amount of repetition, and this could, perhaps, have been avoided by more careful editing, but the outstanding feature of each section is the objective and concise way in which different aspects of electromyography are presented. Most physicians will welcome the clear approach to the fundamental electrophysical principles as they are presented here, and these sections of the book would be a wholesome refresher to almost anyone practicing medicine today.

A good part of the first section of the book is naturally devoted to the history of discoveries leading to the application of electromyography as we know it today. Later the problems of recording, the physical aspects of nerve and muscle membrane electricity, the significance of normal electrical reactions of nerve, muscle, and junction, and methods of interpretation are discussed. Not until the reader is quite familiar with the principles involved are clinical applications covered. The short chapters on EEG leave much to be desired and could well have been omitted without decreasing the value of the book. The section on electroretinography is of some interest but again probably is of little value to one interested in electromyography unless it be for the bibliography.

This little volume can be read in one or two evenings and will be of general interest to those already doing much EMG. It covers enough of the neurophysiology or peripheral structures to make it of great value to all those training in or interested in clinical neurology as well as psychiatry.

* * *

THE PRACTICE OF PSYCHOSOMATIC MEDICINE—
As Illustrated in Allergy—Hyman Miller, M. D., Associate
Clinical Professor of Medicine, UCLA School of Medicine;
and Dorothy W. Baruch, Ph.D., Consulting Psychologist.
The Blakiston Division, McGraw-Hill Book Company, New
York, 1956. 196 pages, \$5.00.

This well known practicing combination of allergist and psychologist have, in the reviewer's opinion, given us a useful insight into their methods of handling patients who have parent and ego trouble along with their asthma, eczema and chronic rhinitis.

Conversation and sign communication between patient, child patient, parent and physician abounds in the book, and practical comments on how to direct emotions and situations are connected immediately in the text with the active participation. Thus the reader has the opportunity of being a clinical auditor and student.

At the beginning of the book a section heading reads, "Variations in the Relation of Immunologic to Clinical Allergy. Sub-headings are: 1. Immunologic Allergy with Consistent Symptoms; 2. Immunologic Allergy with Inconsistent Symptoms; 3. Symptoms Unrelated to Immunologic Allergy; 4. Immunologic Allergy without Symptoms; 5. Symptoms

without Immunologic Allergy." Thus the author finds that a psychologic approach is often of most help in classes 2, 3 and 5. The reviewer would emphatically agree. Both the authors and the reviewer are troubled that the noun allergy has been loosely used to include the definition, antigen-antibody reaction of an "injurious" nature, and also roughly applied to all instances of asthma, eczema and urticaria.

Miller and Baruch follow classical psychodynamic principles in their formulation of the commonest psychologic problems of their patients, and find from their experience that mother rejection of the child, either overt or hidden, induce hostility which in turn is blocked in expression. This they feel is a proper soil for inducing and perpetuating asthma and eczema. These symptoms are body expressions more acceptable in relation to the guilt and anxiety of the patient. They of course offset this by accepting hostility and then aid in gradual expression of it within special limits.

Some individuals working in the field reject the emphasis the authors place on mother rejection of the child as it works in the parent and in the child rejected or smothered with "love." The reviewer believes that the workers conception of this concept may vary. Many would accept the dynamics if couched in more basic biologic terms. Be this as it may, treatment of psychobiologic processes will probably need to be carried out along the lines suggested by the authors until such a time when enzymes, drugs and other levels of communication can be used for aiding adaptation.

Minor criticism of the book would rest (a) in the rather set statements about the role of histamine in the phenomena under discussion, (b) in the reader derived inference that because 96 per cent of the authors' "allergic" patients existed in a climate of mother rejection this obtained throughout the massive population of hay fever and asthma patients in the United States. Here again the reader must be cognizant of the loose use of the term allergy which even creeps into this excellent book, (c) More emphasis should be perhaps placed on how much more we need to know about eczema and these other syndromes.

Altogether, the reviewer as a so-called allergist and of necessity amateur psychologist, highly recommends this book for all of those who wish to use a preventive medicine which treats the patient as well as his symptoms.

* * *

ENDOGENOUS UVEITIS—Alan C. Woods, M.D., Professor Emeritus of Ophthalmology, Johns Hopkins University School of Medicine. The Williams and Wilkins Company, Baltimore, 1956. 303 pages, \$12.50.

The format of the book is excellent, and the illustrations, particularly the colored ones, are outstanding. A bibliography of 303 references is appended, the index is good.

In the introduction, Dr. Woods discusses the nomenclature classification and pathogenesis of uveitis. He still divides the cases clinically into granulomatous and nongranulomatous types.

In the chapter on diagnosis, he stresses the responsibility of the ophthalmologist in directing the diagnostic studies. Etiologic diagnosis is beautifully outlined but he fails to stress that, in most cases, the diagnosis is only a presumptive one. He also fails to point out the value of recognizing known uveitis syndromes so that long, expensive uveitis survey studies can be dispensed with.

Treatment is well outlined.

This is a very valuable book for residents as well as practicing ophthalmologists. The subject of uveitis is probably oversimplified but since this book is an outgrowth of a teaching manual, this is understandably necessary. Certainly this is a book that ophthalmologists will find most useful in their office library.

PRACTICAL NEUROLOGY—Leo M. Davidoff, M.D., Professor and Chairman, Department of Surgery of the Albert Einstein College of Medicine, and Emanuel H. Feiring, M.D., Associate Professor of Surgery (Neurosurgery), Albert Einstein College of Medicine. Landsberger Medical Books, Inc., distributed solely by the Blakiston Division of the McGraw-Hill Book Co., New York, 1955. 442 pages, \$7.00.

This book is intended as a handy guide to neurology for the general practitioner. It is well written, in a rather informal style, with an adequate consideration of the neurological examination. The authors have left out anatomical and physiological background in order to present the essential clinical facts in as small a compass as possible.

Whether such a book, which can almost be said to fall between the usual text and the family "doctor book" popular in the last century, fills a useful purpose is hard to say. Except for a rather obviously surgical viewpoint, not remarkable in view of the authorship, the contents can be accepted as presenting the best of modern thought in the field. That it will make a competent neurologist of the general practitioner is very doubtful; it may, however, serve to guide him in regard to proper reference of neurological patients. It would seem, however, that he would be better advised to invest in one of the standard texts on the subject.

* * *

MENTAL HEALTH PLANNING FOR SOCIAL ACTION—George S. Stevenson, M.D., Sc.D., National and International Consultant, The National Association for Mental Health, Inc., The Blakiston Division, McGraw-Hill Book Company, New York, 1956. 358 pages, \$6.50.

In 1908 Clifford Beers began the mental health movement. This book reviews the accomplishments since then, its present status, and goals for the future.

The mental health field encompasses three sets of objectives. One is the restoration of health for mentally sick persons. A second deals with preventive services for persons who might become ill if not protected from conditions conducive to mental illness. The third objective focuses on the upbuilding of mental health in normal persons; this is positive mental health.

Mental handicaps affect some nine million persons enough to require special help. These persons involve their families, friends and communities in their illness. They impose a larger financial burden on society than any other illness. Yet nowhere in our country do we make full use of known treatments to reduce this burden. In mental illness the public condones some degree of neglect unlike other illnesses.

The most serious psychiatric problems today are alcoholism, mental illness of aging, schizophrenia and psychoneuroses including psychosomatic disorders.

State hospitals treating 750,000 patients each year cost nearly half a billion dollars annually. Yet few are adequately staffed or meet minimal standards. Some 52 per cent of the hospital patients in the U. S. are in psychiatric facilities. Few general hospitals will accept psychiatric patients although it is known that many can be treated quickly with good results and without being medical or nursing problems. Gradually hospitals are overcoming their prejudices and great changes are expected in this area.

In the preventive field the emphasis is currently on improving parental handling of children since the interplay of emotions in the family sets the stage for future mental health or illness. Environmental or cultural dislocations such as frequent changes of family residence or school give rise to potential emotional hazards. In addition to the doctor, the school, church, opportunities for work and recreation are some of the social institutions involved in preventive health activities. In particular, public health authorities have begun to turn their attention to the epidemiology of mental illness.

The positive mental health program seeks to help individuals discover their potentialities and how best these may be cultivated to the end that they enjoy richer, more satisfying lives. The community profits through greater productivity and better human relationships. To what extent this positive mental health program can prevent mental illness is unknown. At present the field of education has manifested most interest in this approach. However, many potentially gifted individuals are still lost to society through lack of assistance at crucial periods in their lives.

In this book the author has successfully encompassed a very broad field, one in which he is unquestionably an authority, showing how to make the most of our knowledge and facilities for promoting better mental health. He offers no short-cuts or panaceas but attempts to point the direction in which we must go to achieve the goals of positive mental health "not merely to extend human life but to augment its power." All individuals and groups working in the mental health field, whether physicians, lawyers, judges, welfare agencies, clergy, teachers, police or sociologists, will find much of value in this book.

* * *

TEXTBOOK OF GYNECOLOGY—Fifth Edition—Emil Novak, A.B., M.D., D.Sc.(Hon.), F.A.C.S., F.R.C.O.G.(Hon.), Assistant Professor Emeritus of Gynecology, The Johns Hopkins Medical School; and Edmund R. Novak, A.B., M.D., F.A.C.S., Instructor in Gynecology, The Johns Hopkins Medical School. The Williams and Wilkins Company, Baltimore, 1956. 840 pages, \$11.00.

The publication of a fifth edition, appearing only three years after the previous issue, attests to the continued popularity of the Textbook of Gynecology by Emil and Edmund R. Novak. The new edition is larger by 40 pages and 20 added illustrations, but the straightforward style, characteristic of all of Emil Novak's writings has been preserved. Whatever advances have been made in the field of gynecology within the last few years have been incorporated in the present edition. The two chapters dealing with the malignancies of the uterus have been extensively revised and the chapter on tuberculosis has been re-written completely with the addition of modern drug and antibiotic therapy. The list of references appended to each chapter has been amended with additional source material. It seems hardly necessary to repeat what is well known, namely, that the Novak text is a thoroughly practical condensation of modern gynecology presented in an easily readable style and well illustrated throughout.

The Williams and Wilkins Company of Baltimore, Maryland, presents the new issue printed in clear large type on good paper and attractively bound.

* * *

DISEASES OF THE SKIN—11th Edition—Richard L. Sutton, Jr., A.M., M.D., F.R.S. (Edin.), Chairman of the Department of Dermatology, University of Kansas Medical Center. The C. V. Mosby Company, St. Louis, 1956. 1479 pages, 1972 illustrations, \$29.50.

This is the 11th edition of one of the finest standard texts in the field of dermatology. While previous editions were edited by father and son, the present edition is authored only by the son, who maintains the high quality of the previous texts.

The text covers 1,479 pages. The illustrations of clinical conditions and pathology are excellent. Each disorder is described with reference to the clinical symptoms, etiology, pathology, diagnosis, prognosis and treatment. Each of the above aspects of every disease handled in a thorough, easily readable manner. References are placed directly in the text immediately following the material discussed.

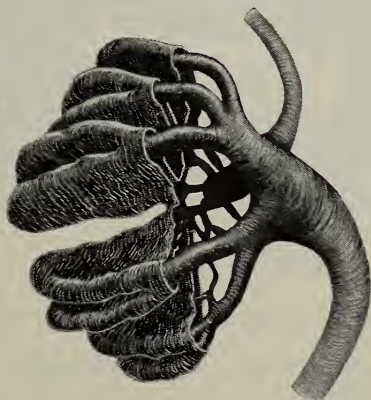
The book is highly recommended as a standard text to medical students, general practitioners and dermatologists.

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Far East Medical Mission To Aid Freedom's Cause

A medical mission has set out for the Southwest Asian Kingdom of Laos with a two-point aim: To help the people medically and to practice a "grass-roots" form of diplomacy.

Dr. Thomas A. Dooley, an American Navy doctor who became a hero to the natives whom he treated during the evacuation of North Viet-Nam, outlined plans for his mission and explained some of the medical problems of the "underdeveloped stricken areas of the world" in an article and guest editorial in a recent issue of the *Journal of the American Medical Association*.

In a note accompanying Dr. Dooley's editorial, Dr. Austin Smith, editor of the *Journal*, sent best wishes for success of the mission, and said, "We also pray you can help others less fortunate than we to understand the benefits of freedom and of the way of life that is possible only under freedom."

Dr. Dooley is going back to Indo-China as a civilian. He feels a physician can give a special service to his country through his ability to go to a foreign land and help the people, at the same time serving as "an illustration of the intentions, achievements and policy of his land."

He organized his mission in order to show the people of Asia that America really believes in the help that it says it does. "We want to be on the offensive for America, not just denying what the Communists say about us, but getting there and doing something about it," he said.

Dr. Dooley, who is only 29, was reared in St. Louis and lives in Washington, D. C. He studied at the University of Notre Dame, South Bend, Ind., and St. Louis University School of Medicine. He served with the Navy in Indo-China from August, 1954, to May, 1955.

He and three assistants, Norman Baker, Berlin, N. H., Peter Kessey, Port Arthur, Texas, and Dennis D. Shepard, Salem, Ore., left the United States August 6 and were scheduled to arrive in Laos, now an independent kingdom in Indo-China, August 27. His three assistants are former Navy corpsmen who served with him during the evacuation. They will remain in Laos for eight months, headquartering in the Laotian capital city, Vientiane.

The mission has received the approval of the United States state department, the International Cooperation Administration and the Laotian government, although it will work under the auspices of the International Rescue Committee, a nonprofit organization.

Most of its financial support comes from the royalties of Dr. Dooley's book, "Deliver Us from Evil," which tells of the Viet-Nam evacuation in 1954, and from a grant of the Research Corporation of New York City. There have been many individual contri-

butions, Dr. Dooley said, and several corporations and public service agencies contributed supplies.

He said that his request for help from various firms "has given me real insight into our capitalistic system. It has excited my interest and wonder. Every single outfit I request supplies from has given me about five times what I asked for . . ."

In explaining his plan of procedure in Laos, Dr. Dooley said that during their stay in the villages, they will make friends with the villagers, treat their illnesses and show donated American cartoon movies for which the Laotian ambassador to the United States has made sound tracks.

"This will be a great thrill to the people of the villages," he said. "Most of them have never seen a white man. . . . After the movie the kids will say, 'Not only do Americans have colorful animals who dance and sing, but the animals can speak Lao.'"

"The following morning we shall say, 'Look, we possess medicines that can cure your yaws, your congenital diseases, your malaria, your trachoma. We possess a type of miraculousness . . . let us help you.'"

"We will treat the people for four or five days, each night showing them another movie, constantly telling them of us and our life, and learning the good characteristics of their honest and gentle Buddhist life. We have no intention of trying to foist our existence on them, nor convert them. The only aim is 50 per cent medicine and 50 per cent to let them have contact with Americans who want simply to help them."

This plan of procedure is much like the one he used when he set up his refugee camp in 1954, except that the problems then were on a much larger scale since he was dealing with 600,000 refugees who were frightened and ill.

The "staggering" medical problems of a refugee camp are quite different from the typical American problems, he said. Illnesses which American physicians never expect to see are prevalent. These include smallpox and innumerable tropical diseases, which are "like the index to the tropical medicine course." The task of feeding is enormous; disposal of waste material is a "gigantic" problem. Safe water must be processed. Burial of the dead "without offending local tradition" is difficult, especially where there are many deaths and little burial space.

In addition to the medical problems, the physician—often the first doctor and the first white man ever seen by the natives—faces many sociological problems. He has to "combat centuries of tradition and custom . . . which command the Orient" in the field of medicine. He has to overcome the fear held for Americans. "To do this we must show persistence in our gentleness. We can never run out of compassion," he said.

Dr. Dooley believes the mission will be a success, partly because word of his evacuation work has

(Continued on Page 72)

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HOW OLD IS OLD ?

*"The really old people are those 10 years older than myself."*¹

*"In the lay mind, anyone past 60 is ready for the discard . . ."*²

*" . . . there are only three principal phases in the span of life: infancy, adolescence and senescence."*³

*"One finds alert, interesting, active folks in the 80's and, on the other hand, there are people in the 20's and 30's who have all the characteristics of old age."*⁴



THE REAL QUESTION

To the physician on the firing line of daily practice, the question of "how old is old?" seems academic. To him, a more valid question is "How can I allay the effects of the aging process?"



FIVE PROBLEMS IN AGING

The answer, according to most authorities, is manifold, for five treatable problems seem to predominate. One, obviously, is gonadal hormone decline. Another is mild anemia. A third is the decreased production of gastric and digestive enzymes. Mineral-vitamin deficiency is the fourth. And the fifth — perhaps most important — is inadequate high-quality protein intake.

THERAPY FOR AGING

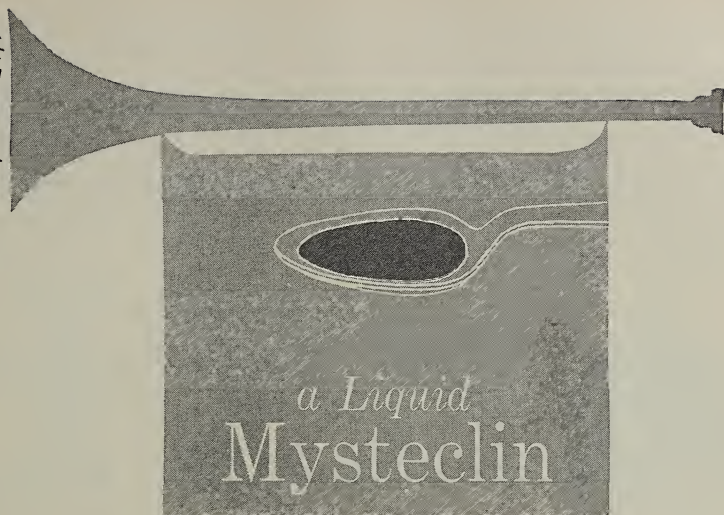
Judging from this confused clinical picture of aging, therapy for the problem would appear difficult. However, most physicians agree that a product which could correct most or all of these five commonest problems would remove past obstacles to satisfactory response. Such a product would, essentially, be true "preventive geriatrics."

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Far East Medical Mission To Aid Freedom's Cause

(Continued from Page 67)

spread to the hills, and partly because "we are enthusiastic and anxious to tell these people a little about America. We wish to explain it to them on a hand-to-hand basis at the grass roots level. We want to show them that America believes in help and that Americans are for the most part very fine fellows."

"Then," Dr. Dooley said, "when the Communists say we are monster Americans, that we roast infants and kill adults. . . I believe these tribal people shall say that they know differently now."

Medical Consultant Answers Public's Questions

An American Medical Association staff physician recently explained an old saying and debunked ideas about snake venom and black pepper.

Dr. William W. Bolton's comments in a recent issue of *Today's Health*, published by the American Medical Association, were in answer to questions from the public.

Small children are told that the "sandman" comes visiting each night and that it is his "sand" which makes their eyes scratchy. Actually the scratchiness

(Continued on Page 82)



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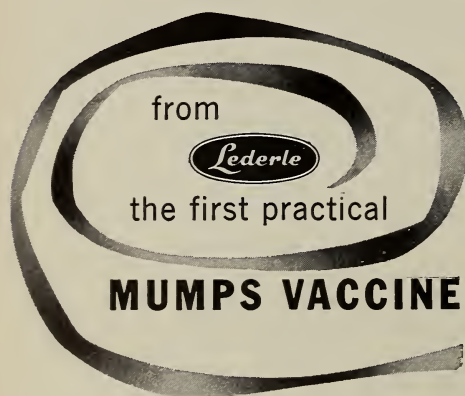
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BOYLE

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Children Need Preschool Eye Examination

A Boston ophthalmologist recently urged parents to have their children's vision checked early and not wait until they enter school.

In fact, it should be done before the child is four years old. The "critical time" in developing acute vision is between the ages of one and seven and the learning ability of any eye falls off sharply after that, Dr. Henry F. Allen said.

"You can't teach an old dog new tricks and the human eye has become an 'old dog' by the age of seven," he said in a recent issue of *Today's Health*, published by the American Medical Association. If children are to be saved from "needless loss of sharp-sightedness" early correction of faulty vision is absolutely necessary.

Children whose eyes obviously turn inward or outward usually receive treatment early. But many others, whose difficulties are in only one eye, frequently don't receive treatment until too late. Since a good eye covers up for its faulty fellow—usually by the mental "shutting out" of the image from the poor eye—and the presence of side vision keeps the child from bumping into things, it is assumed that both eyes are functioning well.

This situation is "most insidious," according to Dr. Allen, since a child with "two bad eyes stands a better chance of receiving attention than one who

has only one bad eye." And that bad eye needs correction. There is always the chance that the child will lose the good eye through disease or injury. In this world of "mechanized motion" normal two-eyed, three-dimensional vision for accurate judgment of distance is a necessity. Lack of two-eyed vision may prevent a person from getting the job he wants.

The pressing problem is detection at early age. This does not mean, Dr. Allen said, that every child must be taken to an eye specialist at the age of three. Pediatricians and general practitioners can test vision by means of picture charts in children too young to read. However, they must be certain to test each eye separately, he warned.

In many cases, the prescription of glasses at an early age is enough to insure normal development of both eyes instead of only one. In other cases the poor eye can be "taught" to function, by covering the good eye with a patch and forcing the bad eye to work. Eventually both eyes can be trained to work together. However, the later such treatment is begun, the slower the progress, and an eye which has not developed clear vision by the age of seven is not likely to do so, he said.

Plan to attend California Rural Health Council—
Sacramento (Hotel Senator) January 25-26, 1957.

AVOID RE-INFECTION FROM HIM IN VAGINAL TRICHOMONIASIS



KARNAKY reports in treating vaginal trichomoniasis "... approximately 39 to 47 per cent of resistant cases are reinfections from the sexual partner."¹

Symptom-free carriers. Most infected husbands of infected wives are asymptomatic. They are "... none the less a potential source of reinfection in wives successfully treated."²

Protect the wife. Karnaky recommends in recurrent cases of vaginal trichomoniasis that the husband wear a prophylactic at coitus for as long as four to nine months. By the end of this time the trichomonads he harbors will usually die out.³

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References: 1. Karnaky, K. J.: *Urol. & Cutan. Rev.* 42:812 (Nov.) 1938. 2. Lanceley, F., and McEntegart, M. G.: *Lancet* 1:668 (Apr. 4) 1953. 3. Karnaky, K. J.: *J.A.M.A.* 155:876 (June 26) 1954. 4. Davis, C. H.: *West. J. Surg.* 63:53 (Feb.) 1955.

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Medical Consultant Answers Public's Questions

(Continued from Page 72)

occurs when the small glands which produce secretions to keep the eyeball moist become tired and slow down. The resulting dryness produces an irritation and causes a person to rub his eyes.

The human body does not build up immunity to the venom of poisonous snakes and neither does it receive any benefits from the consumption of black pepper, Dr. Bolton said. A professional snake handler was bitten 10 times by various snakes and reacted to the venom each time. He was affected more seriously by some of the bites than by others, probably because some bites were deeper.

Although black pepper is 12 per cent protein, it is used in such small quantities that its effect on the body is "negligible," Dr. Bolton said. Raw green peppers, however, are a valuable source of Vitamin C.

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Heatstroke's Early Symptoms Allow Time for Treatment

Severe heatstroke can be prevented because it does not strike without warning. A number of signs appear early enough to allow time to get to a doctor for treatment.


However, when heatstroke does occur, the victim, like a person in diabetic coma, needs prompt outside help. Where the diabetic needs insulin to help maintain his blood sugar level, the heatstroke victim needs help in cooling his body, two St. Louis physicians said in a recent issue of the *Journal of the American Medical Association*.

Drs. Martin G. Austin and John W. Berry explained that heatstroke results from the absence of sweating, due to some unknown defect in the body's temperature control center. An external means such as an ice bath is needed to accelerate heat loss until the body's temperature regulator can gain control.

Heatstroke occurs most frequently under one of two conditions: Either during a sudden elevation of temperature in the early spring or late fall, or during a prolonged period of high temperatures. The doctors explained that with temperatures of over 95 degrees the body's only method of heat loss is by evaporation of sweat. The higher the relative hu-

(Continued on Page 94)

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Rheumatic Fever Control Program Outlined

A rheumatic fever control program which succeeded in meeting and solving an "acute problem" in a rural community with a scattered population and limited financial means was outlined recently.

Dr. Harry A. Grubschmidt, Santa Rosa, Calif., made the report in a recent issue of the *Journal of the American Medical Association*.

The program, carried out under the auspices of the California State Crippled Children's Services and administered by the Sonoma County Department of Health, was begun in 1951. Since then the number of active cases and recurrences has diminished to the point where many of the volunteer activities of the program have been suspended, Dr. Grubschmidt said.

The "enthusiastic support" of numerous volunteer workers and the assistance of voluntary and official community agencies made the program possible despite limited financial support, he said.

The program is set up to provide local facilities for the diagnosis and care of active and inactive cases of rheumatic fever and the referral of cases of congenital heart disease. This includes hospitalization for acutely ill children; hospitalization or home bed care for those with active rheumatic fever, and follow-up appointments for those who are to be watched. Patients who have diseases other than

rheumatic fever are referred to the family physician or an appropriate clinic.

The rheumatic fever clinic is held at the same time on the same day each week in a local hospital. Patients are seen by a cardiologist and a pediatrician, assisted by public health nurses. Other services, including vocational rehabilitation, dietetic aid and social service consultation are available to help carry out the program's aim of "maximum well-rounded care," he said.

Volunteer helpers from community clubs and agencies serve as recreational supervisors, assistants to nurses, and clerks. One volunteer who is a clinical psychologist runs a mental testing program.

Over 550 patients have passed through the clinic in the last five years. Approximately 1440 cases were diagnosed as inactive rheumatic fever with or without residual heart disease, while about 50 were diagnosed as congenital heart disease with or without associated rheumatic fever.

The cost of the program, which is financed by state and county funds, has been relatively low. Dr. Grubschmidt estimated that the average total cost per patient per clinic visit in 1955 was \$4.64. This includes the cost of laboratory tests, electrocardiograms, x-ray films and medicines and does not include hidden expenses such as physicians' services, clinic space and public health nursing.



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Heatstroke's Early Symptoms Allow Time for Treatment

(Continued from Page 86)

midity of the air and the lower the air movement, the less efficient is the sweating mechanism. When it fails heatstroke results.

The symptoms of an actual heatstroke are a hot dry skin, absence of sweating, a high fever, and central nervous system reactions ranging from lethargy to coma. Patients with these symptoms are immersed in ice baths and massaged vigorously until the temperature drops to a safer level. Later they receive oxygen, intravenously-administered liquids, penicillin to ward off infection, and sometimes drugs to maintain blood pressure at normal levels.

Avoidance of further heat exposure when early warning symptoms appear can prevent the heatstroke, the authors said. These symptoms, which may be present for as long as two to five days, include nausea, vomiting, dizziness, headache, muscle cramps, a feeling of hotness, difficulty in breathing and decreased sweating.

The doctors studied 100 cases of heatstroke seen in St. Louis City Hospital during the summers of 1952, 1953 and 1954, three of the six hottest St. Louis summers in the last 150 years.

Patients with diseases of the heart or circulatory system are particularly vulnerable to heatstroke, with 84 per cent of the patients studied having some type of cardiovascular disease. Of the group 95 were men and 41 women. This is in contrast to previous studies in which the victims were preponderately men. Seventy of the victims were over 60 years of age. Seventeen patients, of whom 12 were past 60, died. This death rate is considerably lower than the 38 to 70 per cent reported in other studies. The doctors attributed the lower rate to the use of rapid methods of cooling, drugs to maintain blood pressure, and antibiotics.

They observed a decrease in the number of heat victims admitted to the St. Louis hospital in 1952-54 as compared with the number admitted in the years 1934-36, apparently because of increased use of air-conditioning units, fans and other cooling devices.

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Overwhelmingly powerful. VAGISEC liquid explodes trichomonads within 15 seconds after douche contact!³ One chelating agent and two surface-acting agents, combined in balanced blend, attack the parasite to weaken the cell membrane, to remove waxes and lipids, and to denature the protein. With its

cell wall destroyed, the trichomonad imbibes water, swells and explodes.

The Davis technique. VAGISEC liquid, as a vaginal scrub, is used in the office therapy. VAGISEC liquid and jelly are prescribed for home use.

Prevent re-infection. Many wives become re-infected because husbands harbor trichomonads.² To prevent re-infection, prescribe the protection afforded by Schmid prophylactics. When a rubber is preferred, prescribe the superior RAMSES® prophylactic, transparent and tissue-thin, yet strong. If there is anxiety that rubber might dull sensation, prescribe XXXX (FOUREX)® skins, of natural animal membrane, pre-moistened. At all drug stores.

References: 1. Davis, C. H., and Grand, C. G.: *Am. J. Obst. & Gynec.* 68:559 (Aug.) 1954. 2. Davis, C. H.: *West. J. Surg.* 63:53, (Feb.) 1955. 3. Davis, C. H.: *J.A.M.A.* 157:126 (Jan. 8) 1955.
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ORANGE, N. J.

Patient's Reaction Causes Most Wound Pain

Some individuals receive extensive wounds and feel little pain, while others with only small wounds suffer great pain. It all depends on the situation and what the wound means to the person, a Boston physician said.

Dr. Henry K. Beecher of Harvard Medical School reported in a recent issue of the *Journal of the American Medical Association* on two surveys: One among 150 men wounded at the Anzio beachhead during World War II and the other among 150 civilians undergoing various types of surgery.

He found that the men wounded in the war suffered far less pain, although most of their wounds

were much more serious than the "surgical wounds" of the civilians. He attributed their lessened pain to the fact that the soldiers viewed their wounds as "good fortune" since they would be delivered from an area of "desperate anxiety." In contrast, the civilians viewed their surgical operations as "depressing, calamitous events."

Among the war wounded only 32 per cent wanted a pain reliever a few hours after the injury, while 83 per cent of the surgical patients did.

Dr. Beecher commented that if the extent of tissue damage had any fixed relation to the pain experienced, it would be expected that those with war

(Continued on Page 110)



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Patient's Reaction Causes Most Wound Pain

(Continued from Page 102)

wounds would have more pain, both in frequency and in degree, than those who had surgery.

Instead, wound pain of sufficient degree to require narcotics is far more common in a situation such as civilian surgery where the anxiety level is high, than it is in a situation where desperate anxiety (fear of sudden death on the battlefield) has been replaced by a far lesser worry (a wound). Thus a wound is not alone the cause of pain; the significance of the

wound may be the paramount factor in determining the amount of pain.

Dr. Beecher said this indicates that not all injured persons need to be given pain-killing drugs or medicine. A considerable number of them may be helped simply by "alterations of mood," such as relief of anxiety.

The findings also suggest that experiments in testing pain-killing drugs may be limited in usefulness, since experimental pain carries with it little anxiety.

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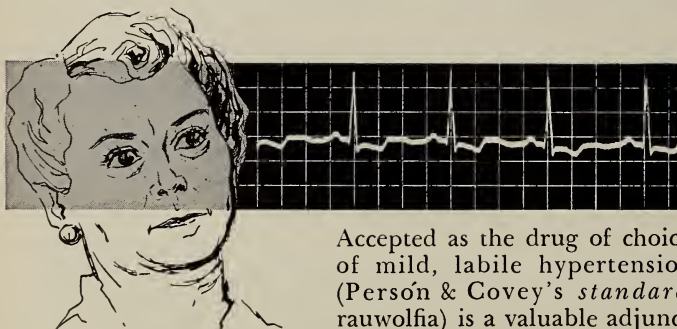
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¹ The New England Journal of Medicine 253:395, September, 1955.

² American Journal of Medical Science 229:379, April, 1955.

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Medical Schools in United States Show Vast Expansion

With a record enrollment and projected operating budgets hitting the 111-million-dollar mark, the nation's medical schools reported that 1955-56 was a year of "continuing progress."

For the seventh consecutive year, enrollment reached an all-time high, with 28,639 students in 76 approved four-year schools and six schools which provide the first two years of medical training. The 1955 entering class also was the largest ever, with 7,686 students beginning their studies, according to the 56th annual report of medical education made by the American Medical Association's council on medical education and hospitals.

Sixteen American schools and one Canadian school reported the completion of construction projects costing more than 65 million dollars, while 17 American and two Canadian schools began projects totaling nearly 45 million dollars.

Expansion in the various phases of medical education is expected to continue. Classes scheduled for graduation during the next few years will be larger than the 1956 class. In addition, seven more schools will be graduating physicians by 1963.

However, before most of these physicians begin practicing, they will be drafted into military service. For example, 80 per cent of the 6,845 members of

the 1956 class was liable for military service, either immediately after graduation or after completion of internship. Thus most of the 1956 graduates will not begin practice or specialty training for at least three years.

In order to expand enrollments and facilities, the schools are increasing their operating budgets. It is estimated that the 82 schools will spend more than 111 million dollars for operation in 1956-57. This is an increase of more than 13 million dollars over the estimated basic operating budgets for 1955-56, with the addition of one new school, the University of Miami School of Medicine, Coral Gables, Fla., which graduated its first class last year. In addition, the schools will spend 58 million dollars in special research grants and nine million dollars in special teaching grants.

The report noted the "significant financial support" given medical education during the last year by the Commonwealth Fund and Ford Foundation. These appropriations recognize the fact that medical schools today are complex centers of medical science, concerned with all the aspects of medicine, the report said. They represent "a vital shot in the arm" in support of the increasing financial needs of medical education that must be met if current high standards of education are to continue.

(Continued on Page 118)

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Medical Schools in United States Show Vast Expansion

(Continued from Page 116)

Four new schools have just opened or are in various initial stages of development. They are: Albert Einstein College of Medicine, New York City; Seton Hall College of Medicine and Dentistry, Jersey City, N. J.; University of Kentucky School of Medicine, Lexington, Ky., and the University of Florida School of Medicine, Gainesville, Fla. Three others are in the process of expanding their two-year basic medical science courses to the regular four-

year program: The University of Mississippi School of Medicine, Jackson, Miss.; University of Missouri School of Medicine, Columbia, Mo., and West Virginia University School of Medicine, Morgantown, W. Va.

The report in a recent issue of the *Journal of the A.M.A.* also noted that the women's enrollment of \$1,573 was a slight increase over the preceding year.

Nearly three-fourths of the approved or newly developing schools are engaged in some type of post-graduate education for the practicing physician in addition to the regular undergraduate courses.

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1. Herrell, W. E., Erythromycin, Antibiotics Monographs, No. 1, p. 29, New York, Medical Encyclopedia, Inc., 1955.

Idem p. 30.

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List Habit-Forming Qualities Of Meprobamate

A Seattle physician recently warned that the tranquilizing drug, meprobamate (Miltown or Equanil), can be habit-forming in a small percentage of cases.

Dr. Frederick Lemere gave his warning because of the unprecedented demand for the drug, because of talk of selling meprobamate over the counter without a prescription, and because it has been advertised as nonhabit forming.

He has seen a few individuals show the standard symptoms of addiction, including a psychological craving for the drug based on its pleasant effects, a build-up or tolerance requiring increasingly larger doses to produce the same effect, and withdrawal symptoms when the drug is suddenly discontinued.

However, meprobamate is still the "most helpful and least harmful of all drugs used for the relief of nervous and emotional tension," but its habit-forming qualities for some persons indicates the necessity for careful supervision of its use, Dr. Lemere said in a recent issue of the *Archives of Neurology and Psychiatry*, published by the American Medical Association.

Dr. Lemere noted withdrawal symptoms among some of his patients. These included feelings of "nervousness," "the jitters," or "let down" when the patients missed their usual doses of meprobamate.

One patient experienced the first convulsion of his life 10 hours after discontinuing the medicine. While this may be coincidence, the pattern was similar to the convulsions seen after sudden withdrawal from alcohol or barbiturates.

"A psychological dependency on the drug is also undoubtedly created in certain patients," he said.

Many feel so much less tense when taking the drug that there may be an exaggerated feeling of well-being. In most cases this drug does not appear to be harmful, but in a few patients it may lead to overdosage on the basis that "if one pill helps, three will help three times as much," he said.

Thirteen of more than 600 patients had to discontinue the drug because of excessive self-medication. Several patients under the influence of six or more tablets a day showed all the signs of intoxication, including an exaggerated sense of well-being, confused speech and generalized incoordination.

A few patients have a build-up tolerance to the drug. He observed nine patients who had to take increasing amounts of meprobamate to obtain the same calming effect.

Dr. Lemere also warned that the prescription of meprobamate to alcoholics should be watched closely for abuse, because of the tendency of some alcoholics to take excessive amounts of anything that acts as a sedative.

Mental Tests Suggested for Aging Employees

A series of mental tests was suggested recently as a way of deciding whether an aging person should retire, remain in his job or turn to a less taxing occupation.

Tests which could give an indication of mental adaptability, judgment and reasoning ability were suggested in an editorial in a recent issue of the *Journal of the American Medical Association*. It accompanied an announcement of objectives by the new American Medical Association committee on aging.

The tests could be of "enormous benefit" to business and to aging persons by keeping the alert older employee on the job. Many aging persons now are forced to retire prematurely solely on the basis of their chronological age. In other cases, the tests could show an individual that it is time to turn to a less taxing job, which could prolong his life.

This, however, is only one of the important problems connected with aging. With the progressive increase in the number of persons living beyond 60 years, more and more attention is being focused on the diseases which attack the aged person, and on ways of keeping him active and relatively healthy, the editorial said.

The problems of aging extend from questions of "changes in enzyme systems within individual cells"

to important social and economic problems of aged persons and their relation to other members of society, the committee statement said.

In recognition of these problems, the American Medical Association's council on medical service has established a committee on aging, formerly called the committee on geriatrics.

The committee announced recently that at its first meeting it set forth several objectives, including the exploration of the medical, biological, psychological and social aspects of aging. It plans to collect information concerning energy maintenance, fatigue control, and the preservation of motivation, and to promote research in these areas.

In addition to informing the medical profession of the availability of information about the aging process, the committee hopes to stimulate medical society interest in the problems of aging and to impress upon the practicing physician the important role he can play by assuming community leadership to enrich the lives of older citizens.

The members of the committee on aging are Drs. Henry B. Mulholland, Charlottesville, Va., chairman; Edward L. Bortz, Philadelphia; Henry A. Holle, Austin, Texas; Wingate M. Johnson, Winston-Salem, N. C.; Theodore G. Klumpp, New York; Cecil Wittson, Omaha, and Frederick C. Swartz, Lansing, Mich.

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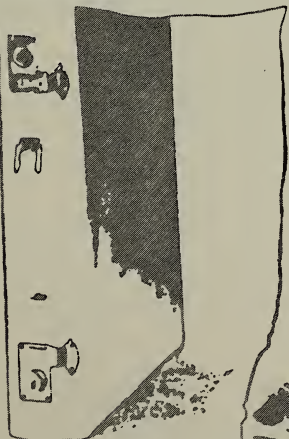
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ROSTER OF COUNTY MEDICAL SOCIETIES, CALIFORNIA MEDICAL ASSOCIATION

(County society secretaries are requested to notify California Medicine promptly when changes are indicated in their roster information.)

Alameda-Contra Costa Medical Assn., 6230 Claremont Avenue, Oakland 18. Meets Third Monday, 8:15 p.m., Hunter Hall, Oakland.
Pres., William Kaiser, 3020 Regent St., Berkeley.
Secy., Robert Leet, 3310 Elm St., Oakland.

Butte-Glenn Medical Society, Meets Fourth Thursday.
Pres., W. S. Lawrence, 405 Sycamore, Gridley.
Secy., Rufus C. Rucker, 188 E. 5th St., Chico.

Fresno County Medical Society, 2811 North Blackstone, Fresno 3. Meets Second Tuesday, 6:30 p.m., Sunnyside Country Club.
Pres., Verne G. Ghormley, 3032 Tulare St., Fresno.
Secy., John P. Conrad, 716 Olive, Fresno.

Humboldt County Medical Society, Meets Second Thursday.
Pres., T. W. Loring 715 I St., Eureka.
Secy., George B. Watson, 539 G St., Eureka.

Imperial County Medical Society, Meets Second Tuesday 8 p.m., Pioneer Memorial Hospital, Brawley.
Pres., Robert J. Westcott, 239 S. 8th St., El Centro.
Secy., Ernest Brock, 200 S. Imperial Ave., Imperial.

Inyo-Mono County Medical Society, Meets Fourth Tuesday except December, January, February.
Pres., J. Lloyd Mason, 512 West Line, Bishop.
Secy., Robert W. Denton, 611 W. Line, Bishop.

Kern County Medical Society, 2603 "G" Street, Bakersfield. Meets Third Tuesday, 7:30 p.m., Stockdale Country Club except June, July, August.
Pres., R. W. Burnett, 515 Truxtun Ave., Bakersfield.
Secy., W. H. Moore, Jr. 1715 28th St., Bakersfield.

Kings County Medical Society, Meets Second Monday, 8:00 p.m., Legion Hall, Hanford.
Pres., Harold J. Jacob, Corcoran.
Secy., George D. Guernsey, 214 Heinen St., Lemoore.

Lassen-Plumas-Modoc County Medical Society, Meets on call.
Pres., W. B. McKnight, Quincy.
Secy., W. C. Batson, Greenville.

Los Angeles County Medical Assn., 1925 Wilshire Blvd., Los Angeles 57. Meets First and Third Thursdays, 1925 Wilshire Blvd., Los Angeles.
Pres., Edward C. Rosenow, Jr., 65 N. Madison Ave., Pasadena.
Secy., J. Norman O'Neill, 1930 Wilshire Blvd., Los Angeles 57.

Madera County Medical Society,
Pres., Coe T. Swift, 501 E. Yosemite Ave., Madera.
Secy., Vilhjalmur J. Guttormsson, 501 E. Yosemite Ave., Madera.

Marin County Medical Society, 1703 Fifth Ave., San Rafael. Meets Fourth Thursday of every month 7:00 p.m.
Pres., John W. Culmer, 1703 5th Ave., San Rafael.
Secy., Russell R. Klein, 1703 5th Ave., San Rafael.

Mendocino-Lake County Medical Society,
Pres., N. E. Bradford Box D, Boonville.
Secy., R. B. Smalley, 361 S. Main, Willits.

Merced County Medical Society, Meets Fourth Thursday, Hotel Tioga, Merced.
Pres., Shelby Hicks Shaffer Bldg., Merced.
Secy., Gerald D. Wood, 544 West 25th St., Merced.

Monterey County Medical Society, P. O. Box 308, Salinas. Meets First Tuesday.
Pres., Clyn Smith, Jr., Cass St. at Carmelita, Monterey.
Secy., Seymour Turner, 921 E. Alisal St., Salinas.

Napa County Medical Society, Meets Second Wednesday.
Pres., Donald B. Marchus, 2020 Jefferson St., Napa.
Secy., Robert C. Ashley, 1775 Lincoln, Napa.

Orange County Medical Association, 1226 N. Broadway, Santa Ana. Meets First Tuesday, 7:00 p.m.
Pres., Frederick T. Hunt, 1616 N. Broadway, Santa Ana.
Secy., Robert T. Garrett, 210 Del Mar Ave., San Clemente.

Placer-Nevado-Sierra County Medical Society, Meets every second Wednesday of each month.
Pres., Nathan A. Dubin, Lincoln.
Secy., T. J. Rossitto, 1166 High St., Auburn.

Riverside County Medical Association, 4175 Brockton Ave., Riverside. Meets Second Monday, 8:00 p.m., El Loro Room, Mission Inn.
Pres., J. Harold Batzle, 4046 Brockton Ave., Riverside.
Secy., Donald Abbott, 4029 Brockton Ave., Riverside.

Sacramento Society for Medical Improvement, 2731 Capitol Ave., Sacramento. Meets Third Tuesday, 8:30 p.m., Sutter Hospital Auditorium.
Pres., Edmund E. Simpson, 2615 Eye St., Sacramento.
Secy., Paul G. Larson, 2901 Capitol Ave., Sacramento.

San Benito County Medical Society, Meets First Thursday, Hazel Hawkins Memorial Hospital, Hollister.
Pres., Kent S. Taylor, 345 Fifth St., Hollister.
Secy., R. L. Hull, Bank of America Bldg., Hollister.

San Bernardino County Medical Society, 615 D St., San Bernardino. Meets First Tuesday 8:00 p.m., San Bernardino County Charity Hospital.
Pres., Frank C. Melone, 124 East "F" St., Ontario.
Secy., Wendell L. Ogden, 1066 East Base Line, San Bernardino.

San Diego County Medical Society 101 Medical-Dental Bldg., San Diego 1. Meets Second Tuesday Mission Valley Country Club 9:00 West Camino Del Rio.
Pres., Maurice J. Brown, 2001 Fourth Ave. San Diego.
Secy., James I. Knott, 3712 30th St., San Diego 4.

San Francisco Medical Society 250 Masonic Ave., San Francisco 13. Meets Second Tuesday 8:15 p.m., 250 Masonic Ave., San Francisco 18.
Pres., Matthew N. Hosmer 250 Masonic Ave., San Francisco 18.
Secy., Robert C. Combs, 250 Masonic Ave., San Francisco 18.

San Joaquin County Medical Society, Meets First Thursday 8:15 p.m., 936 N. Commerce St., Stockton.
Pres., Louis P. Armanino, 2633 Pacific Ave.
Secy., F. A. McGuire, 307 Medico-Dental Bldg., Stockton.

San Luis Obispo County Medical Society, Meets Third Saturday 7:00 p.m., Anderson Hotel San Luis Obispo.
Pres., J. B. Smith, 1405 Garden St., San Luis Obispo.
Secy., Anthony V. Keese P. O. Box 319, San Luis Obispo.

San Mateo County Medical Society, 122 Second Ave., San Mateo. Meets Third Tuesday of each month.
Pres., Norman C. Fox, 512 Jenevein Ave., San Bruno.
Secy., Paul R. Freeman, 2946 Broadway, Redwood City.

Santa Barbara County Medical Society, 300 West Pueblo St., Santa Barbara. Meets Second Monday Cottage Hospital.
Pres., Richard B. McGovney, 2950 State St., Santa Barbara.
Secy., Robert I. Cord, 300 W. Pueblo St., Santa Barbara.

Santa Clara County Medical Society, 1024 The Alameda, San Jose 26. Meets Third Monday of every month, except in July and August.
Pres., Dan Brodovsky, St. Claire Bldg., San Jose.
Secy., J. Frederic Snyder, 205 Medical Bldg., Campbell.

Santa Cruz County Medical Society, Meets every Second Month, Second Tuesday. Time, place to be announced.
Pres., Ludwig Selzer, 330 Soquel Ave., Santa Cruz.
Secy., Samuel B. Randall, 3 Clubhouse Rd., Pasatiempo, Santa Cruz.

Shasta County Medical Society, Meets First Monday.
Pres., Howard Wells, 1308 Court St., Redding.
Secy., Roland R. Jantzen, 1726 Market St., Redding.

Siskiyou County Medical Society, Meets Sunday on call.
Pres., Donald L. Meamber, 750 S. Main St., Yreka.
Secy., Roy F. Schlappi, 750 S. Main St., Yreka.

Solano County Medical Society, Meets Second Tuesday, 8:00 p.m., at different meeting places.
Pres., W. R. Hoops, 1727 Sonoma Blvd., Vallejo.
Secy., George J. Budd, 1004 Marin, Vallejo.

Sonoma County Medical Society, 300 American Trust Bldg., Santa Rosa. Meets second Thursday.
Pres., Andrew E. Thuesen, 304 American Trust Bldg., Santa Rosa.
Secy., Frank E. Lones, 304 American Trust Bldg., Santa Rosa.

Stanislaus County Medical Society, Meets Third Tuesday of the month, 7 p.m., Hotel Covell Modesto.
Pres., E. E. Chouret, 168 S. Third Ave., Oakdale.
Secy., Robert W. Purvis, 709 18th St., Modesto.

Tehama County Medical Society, Meets at call of President.
Pres., Charles Milford, 737 Washington St., Red Bluff.
Secy., I. V. Cooper, 1122 Solano St., Corning.

Tulare County Medical Society,
Pres., Gordon L. Jackson, P. O. Box 177, Terra Bella.
Secy., C. H. Johnson, 795 N. Cherry, Tulare.

Ventura County Medical Society, Meets Second Tuesday 7:15 p.m., Colonial House, Oxnard.

Pres., Richard Reynolds 701 N. A St., Oxnard.
Secy., F. K. Helbling, 34 N. Ash St., Ventura.

Yolo County Medical Society, Meets First Wednesday.
Pres., Neil D. Elzey, Woodland Clinic, Woodland.

Secy., John H. Jones 218 F St., Davis.

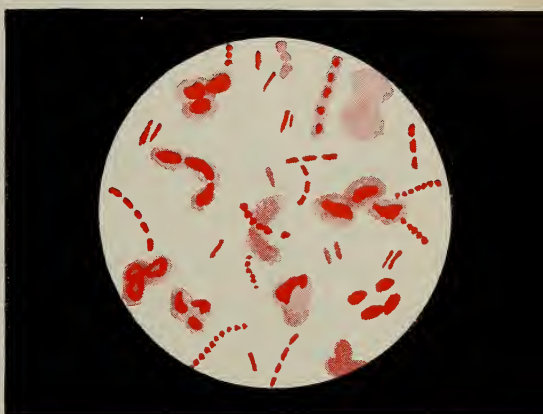
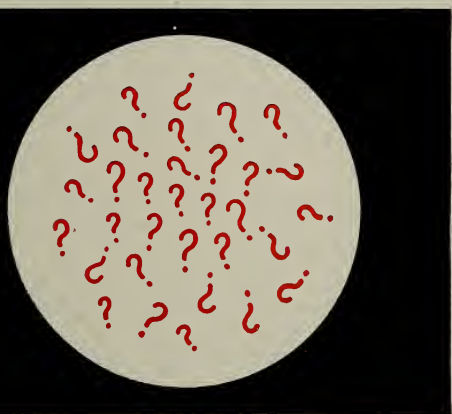
Yuba-Sutter-Colusa County Medical Society, Meets Second Tuesday.
Pres., James J. Hamilton, 1212 F St., Marysville.
Secy., Robert I. Hodgins, 729 D St., Marysville.

(For roster of C.M.A. committees and other organizations, see last month's issue.)

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"Silo-Filler's Disease" Symptoms Described

Farmers have long known that it is dangerous to enter a newly-filled silo, but few realize the full extent of the danger, two Minneapolis physicians stated.

A serious and potentially fatal respiratory disorder, "silo-filler's disease," can result from breathing the gas of fermenting silage, Drs. Thomas Lowry and Leonard M. Schuman said in a recent issue of the *Journal of the American Medical Association*.

They described the newly-identified disease as "any bronchial or pulmonary condition produced by the inhalation of oxides of nitrogen derived from fresh silage." Because it resembles other lung conditions, such as bronchopneumonia, the doctor must know the patient has been exposed to silage fumes before he can make the proper diagnosis.

The authors warned that the possibility of exposure to nitrogen dioxide fumes may increase because of the greater use of commercial chemicals containing nitrogen. These are likely to increase production of nitrogen dioxide in silage.

Prevention of the disease is simple, they said: "Allow no one to enter a silo for any purpose from the time filling begins until seven to 10 days after it is finished." Nitrogen dioxide fumes are produced during this period.

In addition, good ventilation about the base of the silo should be provided during the dangerous period so that gases will be carried away. The area should be fenced to prevent children and animals from straying into it, and a blower fan should always be run before anyone enters a silo.

Even though farmers know it is dangerous to enter a newly filled silo, their actions do not reflect their knowledge, the authors said. Each of four patients seen by the physicians said he knew he was taking a risk when he entered a newly-filled silo. The fact that they were not stopped by the knowledge strongly suggests that their ideas of this "possible" hazard were not definite enough to make them regard the danger as real, the doctors said. They hoped their report will help farmers to regard the hazard more realistically.

The disease in their four patients—two of whom died—followed a similar pattern. Immediately after exposure, cough, difficulty in breathing, a choking sensation and severe weakness occurred. These symptoms remained to some degree for about three weeks when the second phase of the illness began. The symptoms became progressively worse, while chills, fever and blueness of the skin appeared. Eventually bronchiolitis fibrosa obliterations occurred; in this condition the tiny air sacs of the lungs become closed by the ingrowth of the wall tissue.

Antibiotics and other standard treatments for

(Continued on Page 14)

to her OB....

Even to the non-professional eye, this happy teenager fairly radiates health. She's certainly a far cry from her wan and skinny sister of a century ago—whose motto was “an apple a day keeps the doctor away”. Yet physicians know how much teenagers' good health today depends on modern preventive medicine, coupled with the strides made in nutritional science.

Physicians realize that they are today much more than curers of disease—they are preservers of health. They can take steps to assure a healthy youngster of a healthy adulthood—they can even, in large part, affect the well-being of the unborn generation.

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Magnesium (as MgSO ₄)	5 mg.	5 mg.	5 mg.
Calcium (as CaHPO ₄)	75 mg.	60 mg.
Choline Dihydrogen Citrate	60 mg.	100 mg.
Inositol	50 mg.
Rutin	25 mg.

"Silo-Filler's Disease" Symptoms Described

(Continued from Page 10)

respiratory diseases had no effect on the symptoms. Two of the cases were treated successfully with prednisone, a hormone related to hydrocortisone.

Two other reported cases which showed different, but related symptoms suggest that silo-filler's disease is a "continuous spectrum of conditions," they said. The manifestations are likely to differ widely, while severity depends upon the concentration of nitrogen dioxide inhaled and the duration of exposure.

Simple safety measures in the silo will prevent

the inhalation of the gas and therefore prevent the disease, the authors concluded.

Drs. Lowry and Schuman are from the department of internal medicine and the school of public health, University of Minnesota, and the medical service of Northwestern Hospital, Minneapolis.

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108,000 Women Examined in Mass Cancer Survey

A mass cancer-detection program, involving more than 100,000 women, was reported by a group of Tennessee researchers in a recent issue of the *Journal of the American Medical Association*.

Purpose of the program is twofold: To determine the feasibility of the "smear" technique as a method for early detection of cancer of the reproductive organs and to accumulate information about the "natural history" of such cancer.

The Memphis and Shelby County, Tenn., project was set up with the aim of examining all women over the age of 20 in the area and then making three annual reexaminations. Since the program began three and a half years ago over half of the female population—103,000 women—have had one examination, while 33,000 have had two examinations and 8,000 three examinations.

Among the 103,000 women examined once there were 393 intraepithelial carcinomas—a type of growth which is thought to be a forerunner of invasive cancer of the cervix. Of these, 353 or 90 per cent had been unsuspected. This rate is not surprising since such carcinomas normally have no symptoms. There were also 373 invasive cancers of the womb, of which 112 (30 per cent) had been unsuspected. These figures, the authors said, show clearly the value of the smear technique as a method for early cancer detection. This simple procedure consists of taking a specimen of cells for microscopic study.

On the second examination of 33,000 women, 2.2 women per thousand were found to have intraepithelial carcinomas as compared with 3.6 per thousand on the first examination. The rate for cancer of the womb dropped from 3.4 cases per thousand women on the first screening to 0.3 cases per thousand on the second examination. A few of the cases found on the second screening had been missed earlier through error or unsatisfactory smear and the rest were new cases.

The lower rate of uterine cancer and intraepithelial carcinoma in the second screening suggests that the mass-screening approach to the control of uterine cancer can be successful since it finds cancer in the early and still curable stages, they said. However, final conclusions cannot yet be drawn.

The project is a joint effort of the University of Tennessee and the National Cancer Institute, The Memphis and Shelby County Medical Society, the Memphis and Shelby County Health Department and the local units of the American Cancer Society are cooperating in the project.

About half of the smears have been obtained from women visiting their own physicians and the rest from those attending special clinics. The results of

(Continued on Page 26)

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108,000 Women Examined in Mass Cancer Survey

(Continued from Page 18)

the examination are reported to the women's personal physicians who perform further tests or give treatment if needed.

The great advantage of the Memphis plan is that even though it is a mass project, the close doctor-patient relationship is maintained for followup diagnostic studies or treatment, the authors said.

The report also said:

The peak incidence of intraepithelial carcinoma is in women from 30 to 34 years of age, while the peak for cancer of the womb is from 50 to 54 years.

Half of the uterine cancers found were in Negroes, who made up one-third of the population surveyed. Two-fifths of the intraepithelial carcinomas found were in Negroes.

Fifty-nine per cent of all cases of uterine cancer and intraepithelial carcinoma were unsuspected. This represents a finding rate of almost five unsuspected cases for every thousand women.

The number of intraepithelial carcinomas diagnosed in the area during the study was four times greater than the number found in the two years preceding the study.

The report was made by Drs. Cyrus C. Erickson, Bennett E. Everett, Jr., Lloyd M. Graves, Raymond F. Kaiser, Richard A. Malmgren, Phil C. Schreier and Douglas H. Sprunt, and Irma Rube, M.S., and Sidney J. Cutler, M.A. They are from the University of Tennessee and the National Cancer Institute.

Indiana Society Honors American Medical Association Officers

American Medical Association President Dwight H. Murray, Vice-President F. S. Crockett, and Past President Roscoe Sensenich were honored by the Indiana State Medical Association at its recent annual meeting in Indianapolis.

All three were awarded honorary memberships at the association's banquet. Only twice before in the history of the Indiana association have honorary memberships been awarded.

Dr. Murray, of Napa, Calif., was born and educated in Indiana; Dr. Crockett, chairman of the American Medical Association Council on Rural Health, lives in Lafayette, Ind., where he has practiced urology since 1905, and Dr. Sensenich, an internist, retired last June after practicing in South Bend, Ind., for 46 years.

—A.M.A. Secretary's Letter

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<i>Miss G. - O.K. - We'll use Calmitol routinely hereafter. It's much more effective than calamine & never aggravates or sensitizes.</i> <div style="text-align: right;"><i>A.D.</i></div>			

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CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

References (1) Altemeier, W. A.; Culbertson, W. R.; Sherman, R.; Cole, W.; Elstun, W., & Fultz, C. T.: *J.A.M.A.* 157:305 (Jan. 22) 1955. (2) Austrian, R.: *New York J. Med.* 55:2475 (Sept. 1) 1955. (3) Murphy, F. D., & Waisbren, B. A., in Murphy, F. D.: *Medical Emergencies: Diagnosis and Treatment*, ed. 5, Philadelphia, F. A. Davis Company, 1955, p. 557. (4) Weil, A. J., & Stempel, B.: *Antibiotic Med.* 1:319, 1955. (5) Jones, C. P.; Carter, B.; Thomas, W. L., & Creadick, R. N.: *Obst. & Gynec.* 5:365, 1955. (6) Kass, E. H.: *Am. J. Med.* 18:764, 1955. (7) Tebrock, H. E., & Young, W. N.: *New York J. Med.* 55:1159 (Apr. 15) 1955.

This graph is adapted from Altemeier, Culbertson, Sherman, Cole, Elstun, & Fultz.¹



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Hamsters Catch Common Cold

For what appears to be the first time, a hamster, a small squirrel-like animal, has caught a common cold, complete with runny nose, wheezing and swollen nostrils.

This makes the hamster the only animal other than the chimpanzee to catch cold in a laboratory situation, according to five Maryland researchers. Investigators have tried to give colds to many other animals, but they all refused to catch them.

What makes the Maryland research important is the fact that chimpanzees are expensive, while hamsters are easily and economically obtained and easy to handle. In fact, they are "ideal" for common cold research, the researchers said in the September *Archives of Pathology*, published by the American Medical Association.

Four strains of cold virus (MR, C, RLR and D) were taken from human beings who had typical colds. The viruses were given to suckling hamsters

(Continued on Page 38)

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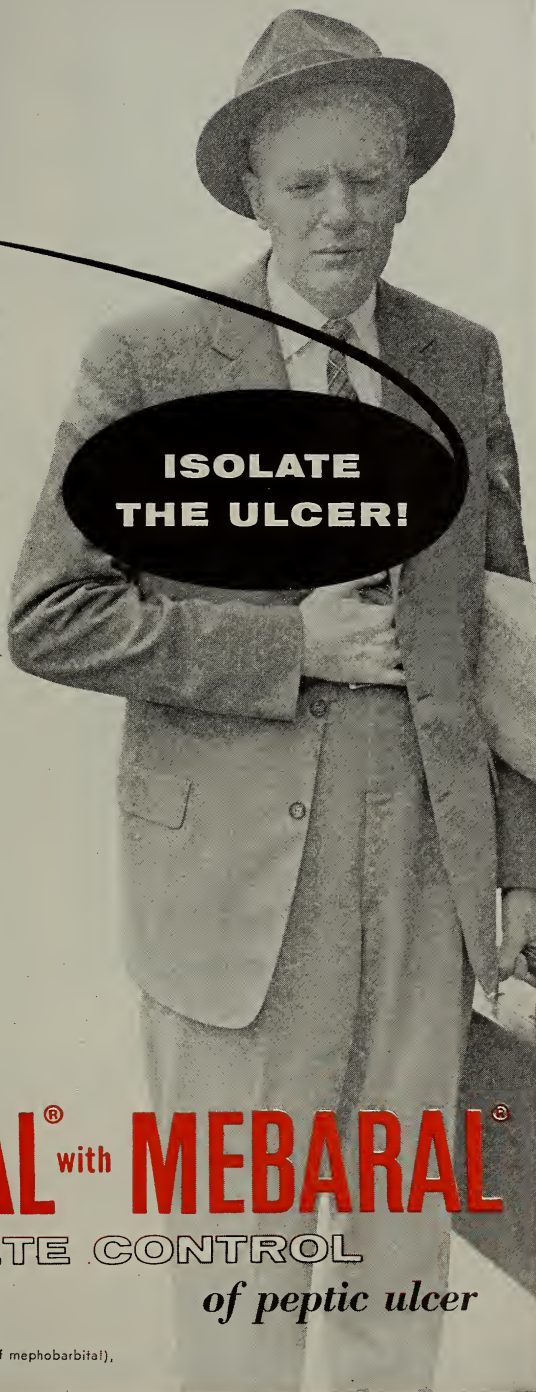
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Heart Massage Continued As Patient is Moved

An unusual case of successful restoration of heart function after it had stopped suddenly was reported recently by three Cleveland physicians.

Hand massage of the heart and artificial oxygen administration, begun in the hospital ward, were continued for 10 minutes while the patient was moved "through the corridors and up four floors in the elevator" to the operating room where electric shock was administered.

The resuscitation procedure has usually been carried out in the operating room when the heart has stopped during surgery. A few "exceptional" cases have been reported in which patients whose hearts stopped while they were elsewhere in the hospital were rushed to the operating room for emergency treatment.

As each new "exceptional" case is reported, the possible applications of resuscitation outside the operating room and even outside the hospital itself increase, the physicians said in a recent issue of the *Journal of the American Medical Association*.

The report was made by Drs. Herschel E. Mozen, Richard Katman and John W. Martin of the University Hospitals of Cleveland and Western Reserve University School of Medicine. Dr. Claude S. Beck, noted Cleveland heart specialist, assisted them.

There is little doubt that the "death factor" is small and may be reversible in many persons who fall over dead with a heart attack, they said. In many cases in which the coordinated heart beat is destroyed by electric impulses accumulating in the heart, the heart is anatomically sound and "ought to be able to continue beating."

"Under favorable circumstances, the heart could be given a second chance to beat and some of these people might be saved," they said.

Their patient was a 51-year-old woman with a history of rheumatic heart disease and other heart symptoms, who had been admitted to the hospital after she had fainted at home. The following day while she was in the ward, her heart suddenly stopped beating and the muscle began twitching.

The chest was opened and within two and a half minutes hand massage of the heart was begun. Artificial oxygen administration—first by the "mouth-to-mouth" technique and later by a tight-fitting face mask—was started immediately to prevent the cell damage that results if the brain is deprived of oxygen for longer than four minutes.

With the oxygen system reestablished, the "emergency situation was under control," the authors said, and it was decided to move the patient to the operating room for the second step—the restoration of a coordinated heart beat. Massage and oxygen administration were continued while she was moved

(Continued on Page 46)

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Pyrimamine Maleate	8.33 mg.
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Acetophenetidin	120.0 mg.
Caffeine Alkaloid	30.0 mg.

Each 5 cc. (teaspoonful) of CITRA SYRUP contains:

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Vitamin C	30.0 mg.
(2) Phenylephrine Hydrochloride	2.5 mg.
(3) Prophepyridamine Maleate	2.5 mg.
Pyrimamine Maleate	3.33 mg.
(4) Dihydrocodeinone Bitartrate	1.66 mg.
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Steinberg, Harry; Use of Double Antihistamine in the Treatment of Allergies, *Annals of Allergy*; 13:183, 1955 • Sokoloff, B.; The Capillary Syndrome in Viral Infections, *Treatment with Citrus Flavonoids*, *Am. J. Digestive Diseases*, 22:7, Jan. 1955. • Biskand, Morton S. and William Coda Martin; "The use of Citrus Flavonoids in Respiratory Infections" *Am. J. of Digestive Diseases*, 22, No. 2, 41, February 1955. • Boines, George J.; *Annals of New York Academy of Sciences*, 61:3721, 1955. • Seisman, G. J., and S. Horoschak, 1950. The treatment of Capillary fragility with Hesperidin and Vitamin C. *Am. J. Digestive Diseases*, 17:92.

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Hamsters Catch Common Cold

(Continued from Page 30)

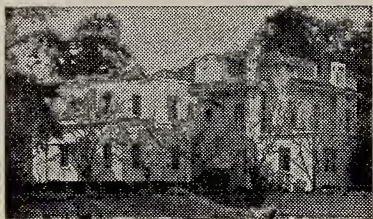
by nose. After three to seven days several sucklings in each group given the viruses exhibited the typical symptoms of a cold.

Other hamsters were exposed to the nose and throat washings from a person who had not had a cold in the past year. None of these animals caught colds. However, when they later received virus material from the hamsters with colds, they developed the typical signs. The hamsters who originally had

colds did not develop them when given virus material a second time.

The researchers are Major Reginald L. Reagan (Ret.), Lt. Col. Eddy Palmer (MC), U. S. Army, Frances S. Yancey, M.S., Sing Chen Chang, Ph.D., and A. L. Brueckner, V.M.D., of the University of Maryland, College Park, Md.

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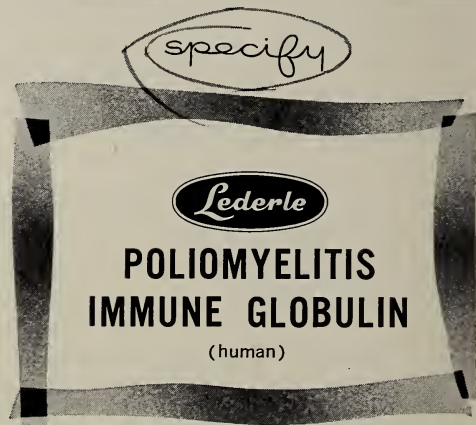
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Hazards of Low-Protein Diets Outlined

Two physicians and the American Medical Association's council on foods and nutrition recently warned against the indiscriminate use of new low-protein diets.

They pointed out serious hazards which they said have not been made clear in nonmedical publicity about the so-called "Rockefeller" or "fabulous formula" diets.

Dr. Norman Jolliffe, director of the New York City department of health's bureau of nutrition, questioned the safety and effectiveness of the diets, while the A.M.A. council and Dr. Vincent P. Dole, New York, urged that persons use the diets only if they are under strict medical supervision. Their statements appear in a recent issue of the *Journal of the American Medical Association*.

All three reports agreed that the diets would be dangerously low in protein content if not used exactly as prescribed and after a doctor's investigation of the individual's condition. Dr. Jolliffe, in fact, said the diets even "as is" are below minimum standards for maintaining body structure and function.

In addition to these warnings, Dr. Dole added a note of discouragement: Even the patients on whom the original diets were tested successfully regained weight when they quit the diets.

The diets differ from both of the most common methods—those which call for low-calorie diets balanced in nutrition, and those requiring drastic cuts in fats, sugars, and starches and increases in proteins. Based on experimental diets developed by Dr. Dole and his colleagues at the Rockefeller Institute of Medical Research, both diets call for lowered protein intake.

One diet, called "peasant diet," "crash diet," or "fabulous formula," is a liquid combination of corn oil, evaporated milk and dextrose. The other, called the "Rockefeller diet" uses regular foods but the council pointed out that the foods chosen contain little protein.

The council report on the "Rockefeller diet" said that "the experimental character of such an abnormal diet makes it imperative for the physician to recommend its use only after careful investigation. The advocacy of the use of this diet by non-medical persons is condemned because of its possible harmful effect under certain situations."

Dr. Dole, in a letter to the editor of the *Journal*, said the dangers of unsupervised low-protein diet selected from natural foods (the Rockefeller diet) lies in the fact that the balance between protein and other foods depends on the judgment of each patient.

Some people, "wrongly thinking that protein caused their obesity," might push restriction to an extreme and end up with a diet entirely different

(Continued on Page 54)

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References:

1. Moyer, J. H., et al.: Drug Therapy of Hypertension: Preliminary Observations on the Clinical Use of Mecamylamine (A Ganglionic Blocking Agent) in Combination with Rauwolfia (A Treatment of Hypertension, Med. Rec. & Ann. 49:390 (Sept.) 1955.
2. Sturgis, C. C., et al.: Advances in Internal Medicine, J. Michigan M. Soc. 55:154 (Feb.) 1956.

* In this clinical trial all patients were given, in addition to one of the ganglionic blocking agents, a constant daily amount of reserpine.

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Heart Massage Continued As Patient is Moved

(Continued from Page 34)

to the operating room. One electric shock was given to the heart, and it resumed beating exactly 30 minutes after it had ceased.

The patient's recovery was uneventful except for minor complications which responded satisfactorily to treatment. She responded intelligently to questions a few hours after the attack although she had a few

minor lapses of memories in the first days. She walked out of the hospital five weeks later. She had no evidence of brain damage and her heart was beating regularly, the doctors said.

"It is obvious that new possibilities for successful resuscitation are being created," they said, but these possibilities raise many questions of when, where and under what conditions resuscitation is desirable and feasible. Before any plan for expanding its use can be made, these questions must be answered, they said.

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Body Autopsied After Six Years in Water

Autopsy of a body which was known to have been immersed in fresh water for six years revealed a "most amazing medical feature," according to a report in a recent issue of the *Journal of the American Medical Association*.

When first examined the body was in a "remarkable state of preservation," with the skin intact and the size, shape, consistency and location of all the internal organs appearing like those of a body freshly examined, Dr. Walter Lentino, a New York radiologist, said.

But when tissues from the various organs were examined microscopically, the amazing feature emerged. The individual cells and tissues were found to have completely dissolved, so that it was impossible to tell from which organ the tissue came.

Dr. Lentino said further experiments might reveal the pattern of changes in the tissue which completely wipe out their individual tissue structure, but still allow identification of organs by size, shape and location.

These experiments might also provide information which could help in determining the length of

(Continued on Page 56)

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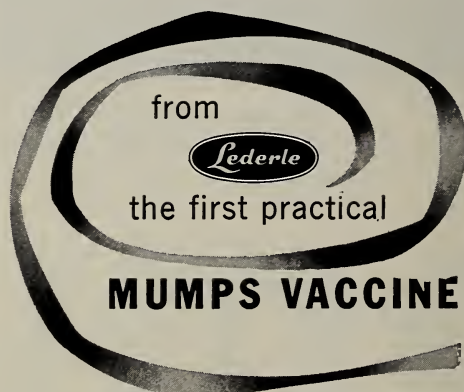
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SUPPLIED: In tiny 25 mg. (green) tablets, and 10 mg. (orange) tablets, bottles of 100. ATARAX Syrup in pint bottles, containing 2 mg. ATARAX per cc.

References: 1. Farah, Luis: Int. Rec. of Med. & Gen. Prac. Clin. 169:379 (June) 1956. 2. Shalowitz, M.: Geriatrics, July, 1956. 3. Robinson, H. M. et al: J.A.M.A. 161:604 (June 16) 1956.

Hazards of Low-Protein Diets Outlined

(Continued from Page 43)

from the original. The other diet—the liquid formula—does not present this hazard, since the proportions are fixed in the mixture, he said. However, the formula is “but one of many diets” used by the Rockefeller researchers, who “do not claim any unique properties for it.”

Dr. Dole concluded that diet is merely one measure which can be taken against obesity, adding:

“Any diet becomes a fad if it is claimed to solve the problem of obesity. An essential part of any sensible diet is a wise doctor trained to manage a chronic and, at the present time, incurable disease.”

Finally Dr. Jolliffe said the protein content of either diet is below minimum requirements for a normal individual. Anyone remaining on the diets for long could suffer protein deficiency, its accompanying nitrogen imbalance, and the resulting serious injury to body tissue.

In addition, he said the diets are short in certain amino acids, the “building blocks” of the body, and are “woefully inadequate” in iron.

He said an important problem is the “compulsive dieter” who is like “the compulsive drinkers and smokers and eaters.” These people may go so far in their dieting that “harm can be anticipated that

neither the resources of the publishers nor the ingenuity of research scientists can always correct.”

The statements criticized the publicity given to the diets in recent articles in national nonscientific publications. They noted that the articles carried insufficient warnings about the hazards of unsupervised use of the diets. The council statement suggested that editors of magazines could cooperate in “this important matter” and make sure “the health of the people is preserved” by urging the proper safeguards.

Student Given More Responsibility For Own Training

The 76 approved four-year medical schools in the United States are placing greater responsibility on students for their own training.

A recent report by the American Medical Association says that this change is in the direction of individualizing instruction and providing opportunities for learning, for self development, and for independent work.

“The aim,” the report says, “is to develop minds capable of appraising evidence and drawing conclusions based on logical reasoning . . . which will prepare the student to continue his own self-education throughout his professional life.”

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Body Autopsied After Six Years in Water

(Continued from Page 50)

time unidentified bodies have been submerged. Experiments could show if there is a definite pattern of tissue disintegration, which organs are attacked first and to what degree, and whether different waters have different effects.

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Dr. Lentino is assistant roentgenologist, Montefiore Hospital, and clinical assistant in radiology at New York University Post-Graduate Medical School.

New Era for Antibiotic Therapy; Other Drug Developments

Papers presented at the fourth annual antibiotics symposium held recently in Washington place emphasis on the use of the drugs in combination. The director of Food and Drug Administration's division of antibiotics summed up: "These presentations and others indicate a distinct trend towards combined therapy, not an old fashioned shotgun approach but a calculated rational method of attacking the problem of resistant organisms." Henry Welch, Ph.D., who also served as symposium chairman, added:

"It is quite possible that we are now in a third era of antibiotic therapy; the first being the era of the narrow spectrum antibiotics, penicillin and streptomycin; the second, the era of the broad spectrum therapy; and the third, the era of combined therapy where combinations of chemothera-

(Continued on Page 60)



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Vitamin B ₁₂	2.5 mcg.
L-Thyroxine	0.1 mg.
Ethinyl Estradiol	1 mcg.
Methyltestosterone	1 mg.
Liver Fraction I	25 mg.
Ethyl Alcohol	0.5 cc.

Dosage: One teaspoonful twice daily before meals, or as required.
Supplied: In 16 fluid ounce bottles, prescription only.

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New Era for Antibiotic Therapy; Other Drug Developments

(Continued from Page 56)

peutic agents, particularly synergistic ones, will be customarily used."

The symposium is sponsored by the FDA in collaboration with two journals, *Antibiotics and Chemotherapy*, and *Antibiotic Medicine and Clinical Therapy*. A total of 156 papers was presented, with participants from 11 foreign countries. FDA Commissioner George Larrick expressed the view that "the frontier of antibiotic research will be notably advanced by the contributions from so many individuals working on different phases of the subject."

Other developments bearing on drugs:

1. In a program by the FDA, in cooperation with the American Medical Association, American Hospital Association, American Society of Hospital Pharmacists and American Association of Medical Record Librarians, eleven large public and private hospitals are making prompt reports to FDA on unusual or adverse reactions to drugs. Objective is to obtain specific information regarding drugs' effects when the drugs are given to large numbers of patients.

2. U. S. Public Health Service is setting up a new unit to assist in developing scientifically sound re-

search programs on tranquilizing and other drugs used in treating mental illnesses. The unit has been named the Psychopharmacology Service Center and will operate under the National Institute of Mental Health in Bethesda. Its director is Dr. Jonathan O. Cole.

—A.M.A. Washington Letter

All Infant Hip Abnormalities Need Immediate Treatment

Every newborn infant who shows even the slightest sign of abnormal hip development should be treated immediately, a Chicago physician recently stated.

Dr. Sherman S. Coleman made his recommendation because it is impossible to know which cases will heal by themselves, which will persist as a partial dislocation, and which will progress to a true dislocation.

The simplicity of the treatment, and the fact that the earlier the treatment is begun the better the results will be, make it "obligatory" to treat all infants showing signs of abnormality, he said in a recent issue of the *Journal of the American Medical Association*.

Treatment should be started within days—or even

(Continued on Page 62)



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1 to 2 teaspoonfuls three or four times daily.

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All Infant Hip Abnormalities Need Immediate Treatment

(Continued from Page 60)

hours—after birth, he said. Most patients treated early are restored to normal within a few months.

Every infant should receive a thorough orthopedic examination immediately after birth and should be repeatedly examined during the first year of life since the abnormal developmental process may be so obscure as to go undetected for several months.

If a partial dislocation goes unnoticed in the early years it may provide the groundwork for a far-

advanced and disabling case of osteoarthritis of the hip joint in adult life, he said.

Dr. Coleman examined 3,500 newborn infants at Primary Children's Hospital, Salt Lake City, and found 32 cases of congenital dysplasia of the hip. This amounts to one case in every 110 births, a rate slightly higher than is usually reported in the United States, but close to the rate in Russia and much less than the one in 10 births reported in Italy, he said. Of his patients, 27 were girls and five boys.

Dr. Coleman is now with the department of orthopedic surgery, Northwestern University, Chicago.

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Number 6

Control of Streptococcal Throat Infections In Schools

A Cooperative Program Followed in Orange County

EDWARD LEE RUSSELL, M.D., Santa Ana

THE GROUP A beta hemolytic streptococcus has now replaced the diphtheria bacillus as the principal bacterial pathogen of serious throat infections.

Investigations³ of recent years have firmly established beta hemolytic streptococcal throat infections as the precursor, and probably the primary etiologic agent, in exacerbations of acute rheumatic fever and glomerular nephritis.

Recent evidence^{2,4} indicates that prophylactic doses of long-lasting penicillin, or certain other antibiotics, usually protect the rheumatic heart from further infectious trauma. This evidence emphasizes the importance of early identification and prompt treatment of beta hemolytic streptococcal throat infections. Certainly these factors are essential components of any rheumatic fever control program.

As a rule, investigators of streptococcal outbreaks, both in the armed services and in civilian populations, have had laboratory facilities in close proximity to the patient. In such a setting, little concern need be given to the effect of drying of material and lapse of time before culturing can be done. However, in a community-wide program, these factors may seriously reduce the reliability of laboratory identification of the beta hemolytic streptococcus.

- Attempts to identify streptococcal throat infections on clinical evidence alone do not provide an adequate or reliable index of the prevalence of these infections in the community.

Epidemiologic information on streptococcal throat infections based on bacteriological identification permits a more accurate assessment of the situation and more logical and more effective control measures.

Recent refinements in laboratory procedures have provided a simple, reliable and relatively inexpensive method for the identification of Group A beta hemolytic streptococci by public health or clinical laboratories.

In Orange County a program for the identification of streptococcal throat infections by cooperative action of the medical profession, the health department and the school authorities greatly aided in control of the disease. A voluntary health agency (heart association) made an important contribution toward the success of the control program.

Any control program in which there are such technical and procedural defects is likely to be reduced in effectiveness.

In spite of the fact that laboratory methods had not been adapted to field use, laboratory identified cases of streptococcal sore throat increased progressively in Orange County (California) during the years 1950-55 (Table 1). Although this situation had

Presented before the Section on Public Health at the 85th Annual Session of the California Medical Association, Los Angeles, April 29 to May 2, 1956.

aroused some concern in the medical profession in the county, including the health department staff, interest in the problem was greatly increased by several large, explosive outbreaks of streptococcal throat infection among school children.

In March, 1954, a spectacular outbreak of a throat infection occurred in a public elementary school attended by 455 children in Costa Mesa (population 12,000). The number of school absentees increased rapidly, from a daily norm of 4 to 5 per cent, to 15 per cent, then to 30 per cent, and almost 40 per cent within a few days' time. A health department team of physician, public health nurse and sanitarian investigated and beta hemolytic streptococci were obtained from the throats of a number of the children. This was the only positive finding. The infection seemed to be predominately one of the respiratory tract. Subsequently, three of the children ill in this outbreak were suspected of having rheumatic heart disease and a fourth had glomerular nephritis.

Beginning in mid-October, 1954, and continuing into February, 1955, the school districts of Anaheim and Fullerton had a higher than normal incidence of streptococcal throat infections (Table 2). Together the cities of Anaheim and Fullerton comprise 17 per cent of the population of Orange County, but in January (1955) they had 43 per cent of the reported cases of streptococcal throat infection—2.5 times their proportionate share. School absenteeism was high and rather closely coincided with the known incidence of sore throat.

Although less dramatic than the outbreaks in Costa Mesa, Anaheim and Fullerton, the infection continued at a high endemic level throughout the county and did not subside until summer (Table 3).

Hoping to deal more effectively with streptococcal throat infections in school children, the county health department on February 2, 1955, asked all physicians, school administrators and school nurses to be more alert and to modify their method of dealing with school absentees, as follows:

1. Take diagnostic throat cultures of all sore throats.
2. Restrict persons suspected of disease, as well as those with confirmed cases, until throat cultures were free of beta hemolytic colonies—the culture by which they were released from restriction not to be taken less than 48 hours after the cessation of medication.
3. No person, regardless of the result of the culture should be released if signs and symptoms of the disease still were present.
4. School nurses were asked to require a negative nasal culture of all children who were out with a sore throat, before readmitting them to school.
5. Physicians were asked to encourage antibiotic

TABLE 1.—Laboratory Identified Streptococcal Throat Infections and Rheumatic Fever Incidence (per 100,000), 1950-55, Orange County, California

	Streptococcal Infections (Including Scarlet Fever)	Rheumatic Fever
1950.....	118	3.7
1951.....	132	3.4
1952.....	149	2.7
1953.....	169	9.8
1954.....	278	14.5
1955.....	313	8.1

TABLE 2.—Streptococcal Throat Infections Incidence (per 100,000) for September 1954 to January 1955

	Sept.	Oct.	Nov.	Dec.	Jan. 1955
Anaheim	3.2	26.8	32.0	73.5	110.5
Fullerton	25.4	7.3	40.0	36.3	120.0
Santa Ana*	16.9	20.3	56.0	34.0	66.0

*For comparison.

TABLE 3.—Monthly Incidence Rates for Streptococcal Throat Infections (per 100,000), Orange County, September 1954 to December 1955

September 1954.....	15.0	May 1955.....	32.3
October	15.5	June	14.0
November	29.8	July	13.3
December	29.8	August	5.2
January 1955	45.6	September	6.6
February	51.2	October	13.0
March	49.3	November	23.1
April	35.8	December	16.2

prophylaxis in all household contacts of persons found to be harboring beta hemolytic streptococci.

6. Untreated contacts who were public food handlers or milk handlers were kept from their jobs for seven days.

Since it was confusing to have different policies regarding the same infection in adjacent school districts within the county, the same rules were applied throughout the county. All physicians were kept informed of the situation, all understood the measures that were being taken to combat it, and all participated in the effort to control the outbreaks and to prevent the spread of the infection.

In a subsequent communication from the health department (February 15, 1955) various questions of procedure were clarified. The authority and responsibility of the school nurse to exclude and readmit children who received either inadequate medical attention or no medical care at all was defined.

On February 18, 1955, a special bulletin to school health personnel explained the situation and specified the control procedures. From this bulletin many school administrators prepared informational material for parents. When they understood the program, parents usually accepted the additional restrictions and many of them expressed approval.

Pediatricians and members of the health department staff made personal appearances before parent-

teachers associations and other parent groups. They found much interest in the problem and in the possibilities for preventing the sequelae of streptococcal infections.

On April 7, 1955, the county health officer and the chairman of the Rheumatic Fever Committee of the Orange County Heart Association met with all school and health department nursing personnel to review the objectives and operation of the program.

The Heart Association prepared a brochure on Streptococcal Throat Infections and, through the schools, sent it to the parents of all children in kindergarten and the first three grades. Owing to the time needed for writing and printing it, the pamphlet did not reach the parents until about the beginning of summer vacation. Hence, again in the fall it was sent home with all elementary school children, and parents' understanding of the problem was greatly increased.

LABORATORY PROBLEMS

At first there was much concern about how much additional burden would be put upon laboratory facilities by the program of culturing material from the throats of the children. The number of such cultures, which averaged 10 to 15 a day in the health department laboratory in a normal quiet period and seldom exceeded 30, increased to 180 to 200 a day. At the same time, private laboratories in the county reported a threefold to fivefold increase in requests for throat cultures for streptococci. As upper respiratory tract infections declined from the winter peak, the throat culture load in the health department laboratory leveled off to 35 to 50 cultures a day.

The additional demand on the laboratory (media preparation, materials and technicians' time) cost the equivalent of half-time for one technician. For this and for other increased demands, another technician and another laboratory aide were added to the health department laboratory staff.

TECHNICAL DIFFICULTIES

Throughout the early months of this streptococcal control program, physicians in private practice, as well as the infectious disease staff of the health department, were troubled by the apparent insensitivity of the laboratory tests. Sick persons in the same families of persons with positive cultures for beta hemolytic streptococci, often had negative cultures. Also the proportion of cultures on which no organisms grew was thought to be too high. Through these months, as always, material for culture was taken from the throat on dry swabs and was inoculated in blood agar plates prepared from human

blood which, in some cases, certainly contained significant quantities of antistreptolysin O.

This problem was referred to the Division of Laboratories of the California State Department of Public Health, which, with the advice and assistance of Dr. Lowell A. Rantz of Stanford University worked on it through the summer of 1955. Several minor, but important, modifications of standard procedures were suggested in the recommendations¹ released by the California State Department of Public Health in September, 1955. Defibrinated sheep cells, to which no preservative or anticoagulant had been added, were advised for preparing blood plates. The addition of 10 per cent of sheep cells (rather than the usual 5 per cent) was advised to give a clearer differentiation between alpha and beta hemolysis. Blood plates prepared in this manner permitted direct and a more accurate reading of the type of hemolysis. Plates were read against transmitted incandescent light, and microscopic examination was not necessary. As a result, a large number of cultures could be read rapidly.

The practice of taking material from nose and throat on dry sterile swabs, and in addition the unusually long lapse of time before the material was put on culture plates, seriously reduced the reliability of the procedure. Sometimes as high as 75 per cent of cultures showed no growth.

To correct this difficulty the recommendations of the state department of public health advised using swabs moistened with serum water, packed in screw-capped tubes, and sterilized. Swabs so prepared were placed in all pick-up stations in order to be available to physicians throughout Orange County. The county health department sent recommendations to all private and hospital laboratories in the county.

COLLECTION AND HANDLING

Through the years, police stations, which are open 24 hours a day, proved to be the most satisfactory locations for laboratory pick-up stations.

Early in the program, the sanitarian or the public health nurse in each district picked up the laboratory specimens from the various stations. However, this took so much professional time that later a messenger was employed to collect the specimens from each station daily. Supplies of swabs at pick-up stations were replenished as needed.

The added number of throat cultures did not cause changes in the normal procedure for picking up laboratory specimens.

On Saturdays and holidays, the public health nurse on duty called the desk sergeant at each police station and if there were nose and throat cultures to be picked up, the nurse included the station in her itinerary. The public health nurse took all laboratory

specimens collected to the laboratory and there planted the nose and throat cultures on blood agar.

No pick-up was made on Sundays unless the health department physician on week-end call happened to be passing through. The physician with week-end duty also had the responsibility for examining and reporting on the cultures on Sundays and holidays. Any family physician who wished to have a culture planted could at any time call any health department physician, who then would meet the family physician's messenger (usually a relative of the patient) and accept the material and plant it.

All cultures for streptococcus were read 18 hours or more after planting. Reports on all "positive" cultures—those showing beta hemolytic streptococci—were phoned to the physician immediately. Reports on all the cultures were mailed to the attending physicians the day the culture was read.

Orange County is a rapidly growing, rural-urban California county, 822 square miles in area, with 450,000 population. The population is 60 per cent urban and 40 per cent rural. There are 17 incorporated cities. Pick-up of laboratory specimens involves 80 miles of travel and about three hours of time.

CHANGES IN PROCEDURE

The experience of the spring and summer of 1955 led to one significant change in the requirements for dealing with patients suspected of streptococcal throat infection. Beginning with September, 1955, negative cultures as a prerequisite to release from restriction have not been required of patients who received adequate antibiotic therapy. Release cultures are now required only of patients who have received nonspecific treatment or none at all. This change has greatly simplified the control program—to the gratification of the attending physician, the school administration and the family—yet has not, in the opinion of the health department staff, considerably increased the probability of a child's contracting a streptococcal throat infection by exposure to another who may still carry the organism.

PREVALENCE OF STREPTOCOCCAL INFECTIONS

Use of a procedure in which nose and throat cultures are used almost exclusively for identification, makes it possible to study the prevalence of streptococcal throat infections in the area. Sudden increases in the number of throat cultures taken

TABLE 4.—Month to Month Variations in Numbers of Cultures for Streptococcus, and in Percentage Positive in Orange County

Month	No. of Cultures	Positive	
		No.	Per Cent
September 1955	464	9	2.0
October	511	40	7.8
November	737	51	6.9
December	775	55	7.1
January 1956	780	83	10.6
February	1,016	88	8.6
March	1,193	100	8.3
April	730	82	11.2
May	907	88	9.7
June	771	64	8.3
July	637	29	4.5
Total (11 months)	9,263	748	8.09*

*It is interesting to note that the over-all proportion of positive beta hemolytic streptococcal cultures coincides with the proportion most frequently mentioned in the literature—i.e. 8 per cent.

closely coincide with increases in upper respiratory tract infections. Month-to-month changes in the percentage of "positive" cultures provides an excellent index of the prevalence of beta hemolytic streptococcal throat infections (see Table 4).

RESULTS

It is not possible to say as yet that any significant reductions have been made in the number of streptococcal throat infections in the area, in the incidence of rheumatic fever or in the frequency of rheumatic exacerbations in known cases of rheumatic fever. However, it is clear that the diagnosis of beta hemolytic streptococcal throat infections by bacteriological identification, rather than by clinical impression, more accurately reveals the nature and extent of the infection and provides a sounder foundation for both therapy and prophylaxis.

P. O. Box 355, Santa Ana.

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Pleuropulmonary Amebiasis

ALBERT C. DANIELS, M.D., and MAX E. CHILDRESS, M.D., San Francisco

IT IS WELL DOCUMENTED that *Entameba histolytica* may secondarily involve the pleural and pulmonary tissues. This complication follows a primary invasion of the intestine by the parasite. While that sequence of events is readily appreciated by most clinicians, the fact that thoracic symptoms may be the sole signal of amebiasis does not always enter the mind of the examining physician.

The disastrous outcome of unrecognized and untreated pleuropulmonary amebiasis as opposed to the satisfactory, and often dramatic, response to antiamebic therapy serves to remind us that the problem is not one of treatment but of recognition. A glance at the *treatment* and *result* columns of Table 1 will further emphasize this point. Of the four patients who died, none received antiamebic therapy. The disease progressed without the diagnosis of pleuropulmonary amebiasis.

The present study was undertaken because of the experience gained in the diagnosis and management of ten cases observed between the years 1942 and 1955.

INCIDENCE

A recent study, in Oregon, by Rinehart and Marcus²⁰ placed the incidence of subclinical amebiasis at 30 per cent of the general population. The relationship between rheumatoid arthritis and amebiasis was discussed by Rinehart.¹⁹

Ochsner and DeBakey in a collected series of 2,490 cases of liver abscess found 209 (8.3 per cent) lung complications and 190 (7.5 per cent) pleural complications.¹⁸ Thus, about a 15.8 per cent incidence of pleuropulmonary amebiasis following amebic hepatic abscess can be expected.

PATHOGENESIS AND PATHOLOGY

A brief review of the disease as a whole will be of aid to a better understanding of the thoracic complications. The parasite travels from person to person via fecal contamination of food and drink. Certain animals and insects are known to harbor *Entameba histolytica*. It has not been established just how important this latter reservoir of infection is for man.³

- Pleuropulmonary amebiasis may be manifest without diarrhea or dysentery.

In obscure lesions of the right lower lung field, one should always consider pleuropulmonary amebiasis — especially with low grade fever and moderate leukocytosis.

Abscess and empyema contents should be examined promptly microscopically or kept warm to preserve the motility of the trophozoites until satisfactory examination is possible.

Conservative therapy will successfully manage most cases of pleuropulmonary amebiasis.

If a thorough search fails to reveal *Entameba histolytica*, and the diagnosis is still entertained, a medical therapeutic trial is in order.

The ingested cysts traverse the stomach and small intestine to the terminal ileum unchanged. At this point, the cyst wall becomes permeable and four nucleated motile ameba emerge.³ According to Craig,³ this excystation probably occurs in the region of the ileocecal valve. Some of the motile parasites invade the mucous membrane of the bowel and multiply in the tissues as trophozoites. Others which fail to invade the mucous membrane of the bowel multiply as trophozoites in the lumen for an undetermined period, then encyst. The parasites are finally voided in the feces as cysts or trophozoites. If the cysts reach another host, the cycle is repeated. Usually, the trophozoites journey from the intestine to the liver via the portal circulation. Here, amebic hepatitis occurs. If thrombosis and infarction result from the lytic activity of the parasites, an hepatic abscess occurs. Progression of this abscess may incorporate the diaphragm, so that the stage is set for pleuropulmonary complications by direct extension. After penetration of the diaphragm, three possible pathological situations may develop. These are empyema, lung abscess or bronchohepatic fistula.¹⁸ Combinations of these lesions may occur (see Figure 1).

The parasites may reach the pulmonary parenchyma by the hematogenous route, as well as by direct spread. This, however, appears to be uncommon. It is generally agreed that there are three possible routes of spread by the blood stream. These are by the middle and inferior hemorrhoidal veins, the hepatic veins and by way of the intestinal lymphatic chain through the thoracic duct.¹⁸ The resultant pathological states include either a solitary lung abscess or concomitant separate liver and lung abscesses (see Figure 2).

Read before the San Francisco Surgical Society, January 1956.
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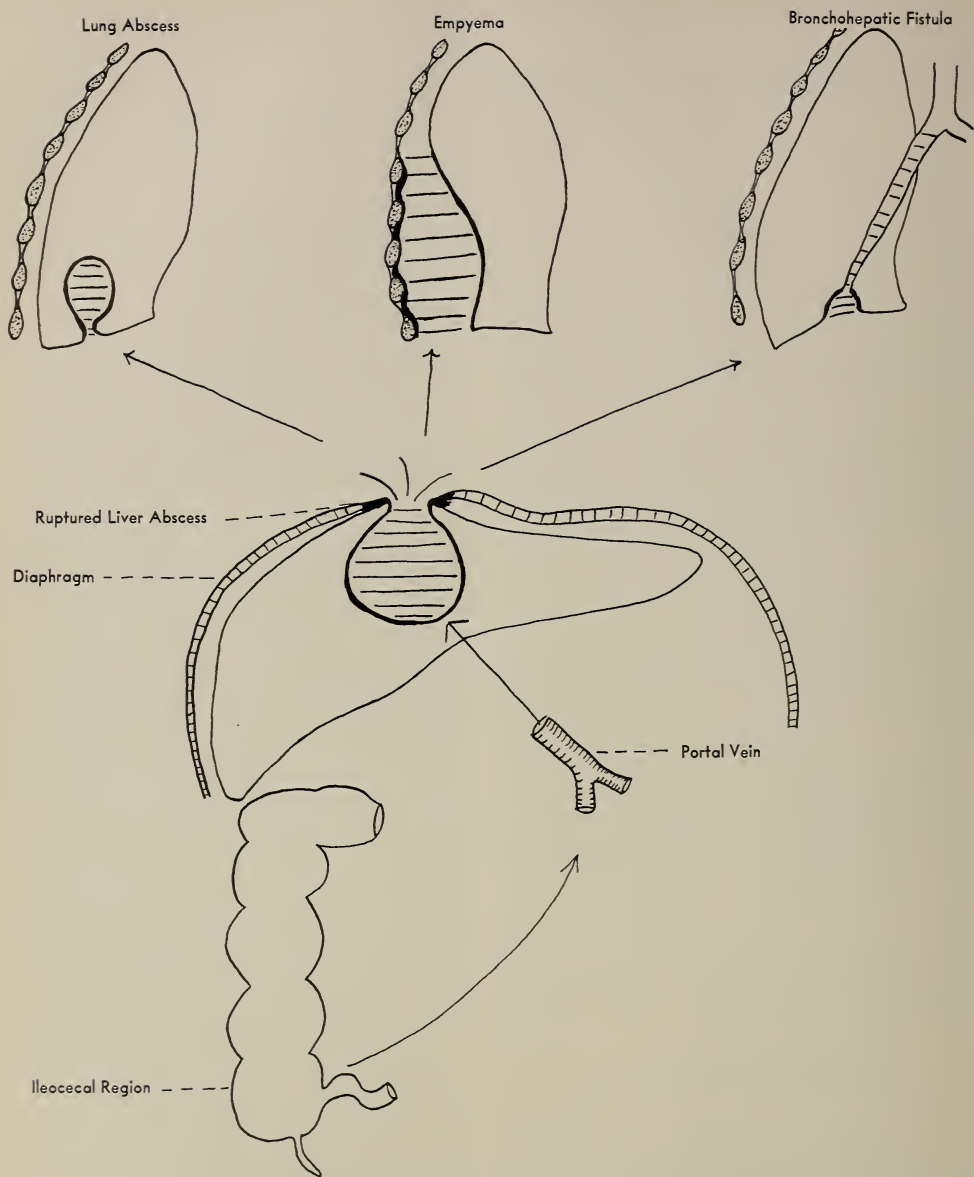


Figure 1.—Pathogenesis of pleuropulmonary amebiasis by direct extension from liver abscess (modified from Ochsner and DeBakey¹⁸).

Early experimental work (1914, 1928) indicated that the venous blood flow from the right side of the colon tended to pass to the right lobe of the liver, while blood flow from the left side tended to pass to the left lobe of the liver.^{1,4} Recent experimentation casts doubt on this concept.² However, it may ex-

plain, in part, the fact that the common site for the formation of liver abscess is the right lobe of the liver. The inference being that the ileocecal lesion spreads by the portal blood stream to the right lobe of the liver and penetrates its convex surface to incorporate the diaphragm.

Hematogenous Lung Abscess with
Independent Liver Abscess

Hematogenous Lung Abscess

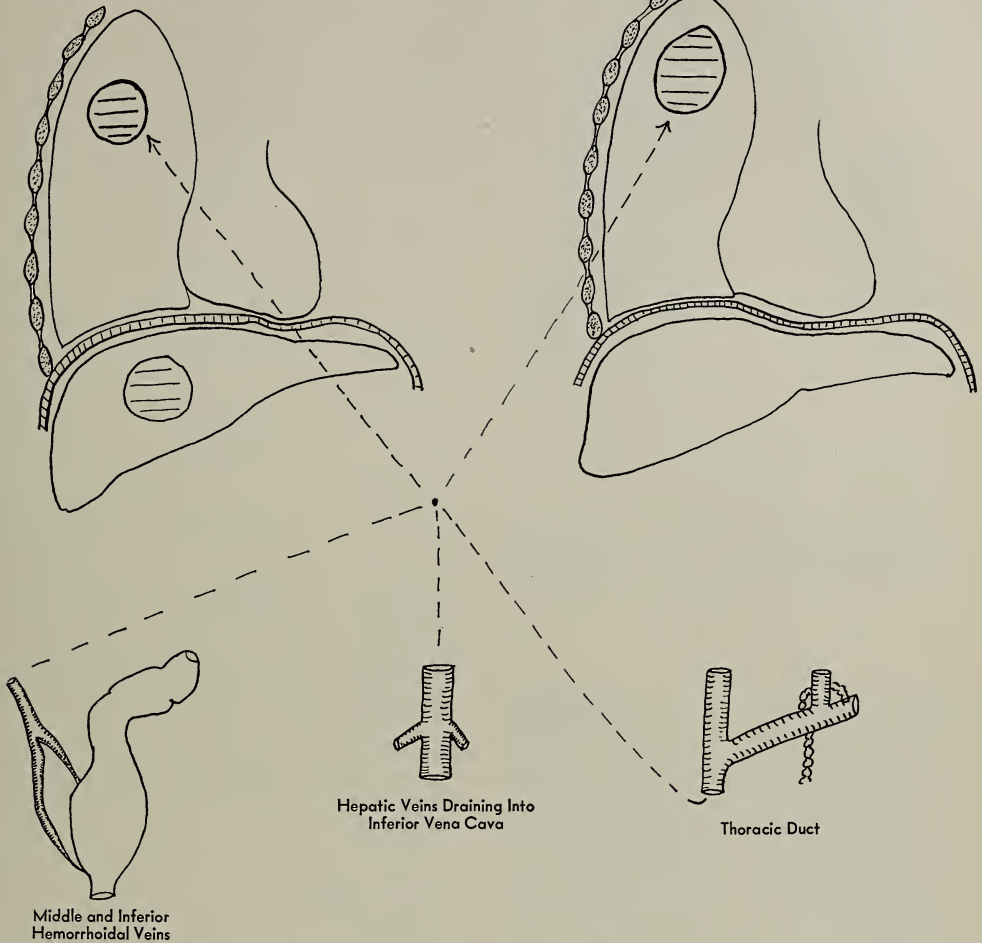


Figure 2.—Pathogenesis of hematogenous pleuropulmonary amebiasis by the three possible routes of spread (modified from Ochsner and DeBakey¹⁸).

Abscess formation in the left lobe of the liver is infrequent. Pericarditis as a sequela has been described.^{17,21}

The contents of a hematogenous amebic pulmonary abscess are purulent, and are not considered characteristic.¹⁸ The pulmonary amebic abscess formed by direct extension is considered characteristic. Its contents have been described as resembling "chocolate sauce" or "anchovy paste." Abscesses of this latter type do not contain purulent matter, but a mixture of blood, cytolyzed liver tissue and small solid particles of liver parenchyma which have resisted dissolution.¹⁶ When a "chocolate sauce" ab-

scess becomes secondarily infected, the contents change to a purulent character. This may be manifested by a greenish or grayish yellow creamy color.¹⁶

DIAGNOSIS

A strong index of suspicion should serve to keep physicians alerted for this condition. Lesions of the right lower lung, especially those of obscure etiologic lineage, should not be dismissed without a thorough search for *Entameba histolytica*.

Dysenteric symptoms have long been associated with amebiasis but they may be entirely absent or

TABLE 1.—Analytic Data on Ten Cases of Pleuropulmonary Amebiasis.

Case	Age	Sex	Leukocytes per cu. mm.	Initial Diagnosis	Diagnosis Confirmed by	Treatment	Lesions	Result
1.	43	M	12,700	Lung tumor	Pulmonary resection	Left upper lobectomy	Lung abscess	Died
2.	49	M	11,800	Pulmonary tuberculosis	Autopsy	No specific therapy	Lung abscess Liver abscess	Died
3.	35	M	11,500	Cholecystitis	Autopsy	Sulfathiazole	Bronchohepatic fistula Liver abscess Pleural effusion	Died
4.	54	M	10,900	Subphrenic abscess	Autopsy	Drainage attempted Antibiotics	Bronchohepatic fistula Lung abscess Liver abscess	Died
5.	38	M	19,800	Pneumonia	Pleural biopsy	Thoracostomy Emetine Carbarsone	Empyema Lung abscess Liver abscess	Recovered
6.	43	M	10,300	Pneumonia	Therapeutic response	Emetine Carbarsone	Lung abscess Liver abscess	Recovered
7.	39	M	7,800	Pulmonary tuberculosis	Stool studies Pneumoperitoneum	Emetine Chloroquine Carbarsone	Lung abscess Liver abscess	Recovered
8.	53	F	not determined	Amebiasis	Sputum studies	Emetine Carbarsone	Lung abscess Liver abscess	Recovered
9.	39	F	9,000	Pulmonary tuberculosis	Pleural exudate studies	Thoracostomy Emetine Chloroquine Carbarsone	Empyema Lung abscess Liver abscess	Recovered
10.	61	M	4,500	Pneumonia	Therapeutic response	Chloroquine Diodoquin® (diiodohydroxyquin)	Liver abscess Lung abscess	Recovered

dysentery may have occurred in the remote past so that the patient has forgotten about it. A 20-year or even as much as a 43-year interval may elapse between the dysenteric and the hepatic stage.^{6,17} In the case in the present series (Case 1, Table 1) 20 years elapsed between ulcerative proctitis and the onset of pulmonary symptoms. It is notable that in the list of symptoms (Table 2) in the present series, diarrhea and dysentery are absent.

Hepatic lesions, in the absence of dysentery, are more likely to occur in infection of the right side of the colon. In contrast, lesions of the left side of the colon are more likely to be associated with dysentery.^{5,17}

Diaphragmatic involvement by the expanding liver abscess may produce pain in the right shoulder and discomfort low in the chest on the right side. Abdominal pain in the region of the right costal margin, due to an enlarging liver, may be mistaken for the pain of gallbladder disease. Often the liver is definitely palpable and tender.

A nonproductive cough due to irritation of the bronchi in the right lower lung may progress to a

TABLE 2.—Symptoms Noted in Ten Cases of Pleuropulmonary Amebiasis.

Symptom	No. Cases
Cough	10
Loss of weight.....	7
Excessive sputum	6
Thoracic pain	5
Hemoptysis	4
Dyspnea	2
Abdominal pain	1
Weakness	1
Fatigue	1
Tachypnea	1
Shoulder pain	1

TABLE 3.—Physical Signs Observed in Ten Cases of Pleuropulmonary Amebiasis.

Signs of	No. Cases
Fever	10
Consolidation, right lower lung.....	7
Enlarged tender liver.....	4
Emaciation	2
Consolidation, left upper lung.....	1
Pleural fluid	1

productive cough and the expectoration of "chocolate sauce."

Wasting, at times, is so pronounced that the situation may appear hopeless to a casual observer. This is especially true when the hepatic and pulmonary lesions remain undiagnosed for a considerable period.¹⁰ The presence of cachexia, in company with a pulmonary lesion, should direct one's thoughts toward pulmonary amebiasis as well as pulmonary tuberculosis and carcinoma.

Upon physical examination of the chest, signs of pleural fluid or pulmonary consolidation or abscess may be noted. An enlarged tender liver with the above findings in the right hemithorax is very suggestive (see Table 3).

A hemogram, while not diagnostic, often supplies additional evidence for the recognition of the disease. Anemia may be present. Leukocytosis of a mild degree may be expected. It is quite probable that pronounced leukocytosis indicates secondary bacterial invasion of the amebic process. In general, there is moderate leukocytosis without much change in the proportion of polymorphonuclear leukocytes¹⁷ (see Table 1).

Roentgenography offers considerable assistance. The main findings are localized to the right lower lung field and the right hemidiaphragm. Hematogenously induced pulmonary amebiasis is the exception (see Figure 3). The roentgenographic features will vary with the stage of advancement of the morbid process. The right hemidiaphragm may be elevated. Fluoroscopy may show the hemidiaphragm fixed. A localized superior bulge may indicate an underlying liver abscess which should be distinguished from a herniated liver.⁹ Pneumoperitoneum²² is of value to demonstrate a connection between the liver and hemidiaphragm (Figure 4). Actual invasion of the pulmonary parenchyma will be indicated by the visualization of a triangular infiltrate with the apex toward the hilum of the lung and the obliteration of the cardiophrenic angle (Figure 5) or an abscess cavity. The latter may or may not contain fluid, depending upon the presence or absence of a bronchial communication. If the pleural space were involved, the usual manifestations of pleural fluid would be present. Transient pulmonary infiltrations as noted in Loeffler's syndrome have been described in association with pulmonary amebiasis.⁸ Pulmonary cavitation which persists after adequate antiamebic therapy probably is coincidental and not etiologically associated with *Entameba histolytica*.

Discovery of the cysts or trophozoites in the sputum, pleural exudate or stool establishes the diagnosis. Five stool examinations with intervals of several days should be the minimum.¹³ If the pleural



Figure 3 (Case 1).—Note the unusual position of the pulmonary amebic abscess in the left upper lobe. This represents the end result of hematogenous spread.

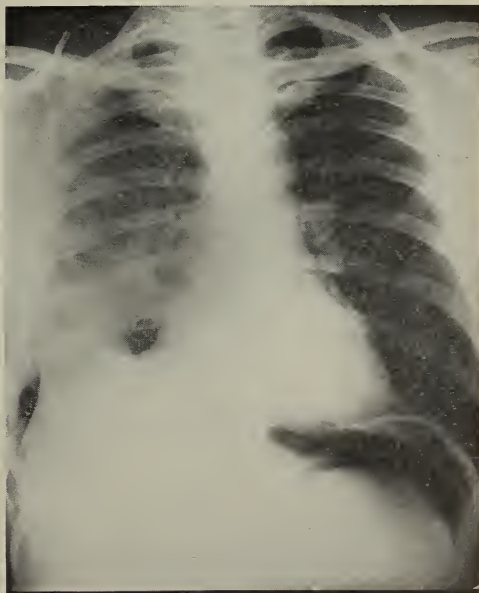


Figure 4 (Case 7).—Showing the value of pneumoperitoneum. A connection between the liver, diaphragm and lung may be readily demonstrated.



Figure 5 (Case 9).—Demonstrates the triangular infiltrate of the right lower lung field with obliteration of the cardiophrenic angle.

space is inadvertently drained, the diagnostic value of a pleural biopsy should not be overlooked. Collection and examination of the specimen should be done with care. It must be borne in mind that the trophozoites lose their motility as they cool. Therefore, microscopic examination should be done as soon as the specimen is obtained. If this is impractical, the specimen must be kept warm until adequate examination can be done. If the result of a complement fixation test is positive but trophozoites cannot be demonstrated in the stool, some clinicians believe extraintestinal amebiasis is indicated.^{15,25}

The commonest diagnostic errors in the present series are exemplified in Table 3. Pleuropulmonary amebiasis may be mistaken for pulmonary tuberculosis, subphrenic abscess, tumor, pneumonia, cholecystitis, bronchiectasis¹¹ and appendicitis.¹²

TREATMENT

One of the gratifying aspects of this disease is the response to antiamebic therapy. Specific drugs are available. The most satisfactory therapeutic regimen used in the present series was the combination of emetine hydrochloride, chloroquine and carbarsone, used in the following manner:

a. Emetine hydrochloride subcutaneously, 1.0 mg. per kilogram of body weight daily, given 4 to 6 days, followed by,

b. Chloroquine orally, 0.5 gm. two times per day for 2 days, then 0.25 gm. two times per day for 14 to 20 days, followed by,

c. Carbarsone, 250 mg. two times per day for 10 days.²³

Craig³ noted that the effectiveness of emetine is limited mainly to the destruction of the trophozoite form. Further, he noted that with blood content at therapeutic levels the cystic forms are not inactivated. Chloroquine has its greatest activity in amebiasis of the extracolonic type. Thus, while emetine hydrochloride and chloroquine are appropriate for pleuropulmonary and hepatic amebiasis,²⁴ they are not the drugs of choice for intestinal amebiasis. The latter condition should be treated with one of the iodine or arsenical amebicides to rid the intestinal tract of *Entameba histolytica*. Chlorotetracycline (aureomycin) has been used effectively in pleuropulmonary amebiasis.⁷ It may be useful if emetine is not tolerated. Since the advent of so effective a therapeutic agent as chloroquine, the value of emetine hydrochloride has decreased. It may be that the indications for emetine will narrow to the occasional case in which there is need for parenteral use.¹⁴

Aspiration of amebic liver abscess has been recommended.¹⁷ However, what with the potent antiamebic drugs now available, aspiration is probably rarely indicated.

Unquestionably, pulmonary resection will be done in some cases of pulmonary amebiasis in which abscess or infiltrate is manifest but in which the diagnosis is undetermined preoperatively. While pulmonary resection is not indicated, pleuropulmonary amebiasis can be handled satisfactorily after such a procedure providing it is recognized and antiamebic therapy instituted early.^{7,10} In general, the authors are of the opinion that operation should be avoided if possible.

The diagnosis is often difficult to confirm.²⁶ If pleuropulmonary amebiasis is suspected, a therapeutic trial with drugs is in order. It may establish the diagnosis as it resolves the treatment problem.

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Carbutamide Clinical Trial Suspended

ELI LILLY AND COMPANY has announced the suspension of the fifteen-month clinical trial of carbutamide, or BZ-55. Carbutamide is a sulfonamide derivative which controls many cases of diabetes when given by mouth.

In a statement, Dr. Kenneth G. Kohlstaedt, director of the clinical research division, said in part:

"We have communicated this decision to some 2,900 physicians who have been testing carbutamide in more than 10,000 patients. Discontinuing use of the drug involves no danger to the patients who have been controlling their diabetes with it. They may safely return to their former method of control.

"We are not unmindful of the fact that 40,000 patients in Germany have taken carbutamide without any serious side effects being reported by German investigators. Nor are we unmindful of the fact that in our own studies 95 per cent of those patients who are able to control their diabetes with carbutamide appear to be able to do so for months without untoward effects. However, among the other 5 per cent there have been a few serious side reactions to the drug which are identical to those experienced with other sulfa drugs.

"In view of these findings, and in full consideration that carbutamide is a drug of convenience rather than necessity, Eli Lilly and Company believes it is prudent to suspend the clinical trial pending further investigation."

The Clinical Evaluation of Renal Function

RALPH GOLDMAN, M.D., Sepulveda

THE MOST IMPORTANT known function of the kidney is maintenance of the normal body composition by selective excretion. Table 1 shows the substances that enter the body daily and the related amounts of these substances, or their equivalent metabolic end products, that must be eliminated from the body in the same period of time for the body weight to remain constant. Carbon dioxide is carried out of the lungs with the expired air. About a liter of water is lost through the skin and lungs, the exact amount being determined by thermal regulatory requirements. A relatively small amount of water and solids, actually only 100 to 150 gm., is excreted in the stool. The remainder, including about 90 per cent of the nitrogenous end products and minerals, 1,500 cc. of water, and miscellaneous incompletely metabolized drugs and chemicals, is excreted by the kidneys.

Modern researches have clarified many of the renal excretory mechanisms. Much of what is now known has come from intensive exploitation of clearance methods. As a result, it is now known that normally almost one-fifth of the cardiac output flows through the kidney each minute, that from this blood a large filtrate is formed at the glomeruli, and that 99 per cent or more of this filtrate is reabsorbed by the tubules, part passively and part by active and selective processes. The tubules may add hydrogen, ammonium and potassium ions, some metabolites and certain drugs and chemicals to the filtrate to constitute the urine. By these selective processes the body fluid composition is maintained at optimal values.

Research methods for determining the level of renal function may not be suitable for use by clinicians. Clinicians perform renal function tests to answer specific questions: (1) What is the renal disease? (2) Is there impairment of renal function? (3) How severe is this impairment? (4) Is it progressive? (5) Will the patient die, and, if so, how soon? The requirements for a satisfactory test, in addition to answering as many of these questions as possible, are accuracy, speed and simplicity of performance, economy, acceptance by the patient (so that serial determinations may be performed) and

• Renal function tests are of limited value in differential diagnosis, except to establish the existence of uremia. The ability of the kidney to concentrate urine is often the first function to manifest impairment, but is of little value in prognosis. All clearance tests suffer a similar disability: Hypertrophy of nephrons with restoration of normal function may mask nephron loss. For the reasons outlined, the serum creatinine determination is the most useful of the clinical function tests, especially when combined with a test of maximum concentrating ability. In men, the serum creatinine value divided into 100 gives the approximate creatinine clearance; in women the numerator must be 60. For greater precision, the actual creatinine clearance should be determined. Finally, frequent serial determinations of any of the function tests offer prognostic utility greater than do infrequently performed research methods.

safety. It must be borne in mind that tests requiring catheterization carry the risk of introducing infection. Although the methods for clearance determination utilizing inulin and para-amino hippurate, yield the maximum information with the greatest accuracy, the other requirements are not as well met. Hence the clinician must satisfy himself with the more traditional tests, perhaps feeling a little guilty of not being modern and scientific. However, an attempt will be made here to show that these tests can fulfill adequately clinical requirements.

The normal diet contains about 100 gm. of protein. As a result, 16 gm. of nitrogen must be excreted to maintain nitrogen balance. About 1.4 gm. is excreted in the stool, and of the remaining 14.6 gm., 13.3 gm. is excreted as urea nitrogen, 0.5 gm. as creatinine nitrogen, and 0.8 gm. as the sum of the residual components. The 13.3 gm. of urea nitrogen,

TABLE 1.—Gross Metabolic Balance (2,500 Calorie Diet)

Intake	Grams	Output	Grams
Carbohydrate	300	Nonprotein nitrogen	
Fat	100	compounds	35
Protein	100	Unabsorbed fat, etc.	10
Minerals	20	Minerals (including	
Water	2,300	oxides)	25
Oxygen	780	Water	2,600
		Carbon dioxide	930
	3,600		3,600

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TABLE 2.—The Relationship of the Blood Urea Nitrogen to the Glomerular Filtration Rate

Blood Urea Nitrogen Mg. per 100 cc.	Filtration Rate Cc. per Min.	Filtered Urea Nitrogen Mg. per Min.	Reabsorbed Urea Nitrogen Mg. per Min.*	Urine Urea Nitrogen Mg. per Min.*	Urea Clearance Cc. per Min.*
18.....	100.0	18.0	9.0	9.0	50.0
36.....	50.0	18.0	9.0	9.0	25.0
72.....	25.0	18.0	9.0	9.0	12.5
144.....	12.5	18.0	9.0	9.0	6.25

*These are approximate values only.

representing about 30 gm. of urea, makes up over half of the urinary solid content and is therefore the major excretory "load" of the kidney. To maintain an excretory rate of 13.3 gm. per day, it is necessary to excrete 9 mg. per minute.

Urea enters the urine entirely by way of the glomerular filtrate. As the filtrate flows down the tubule, varying amounts of urea diffuse back into the circulating blood. At the usual rate of urine formation, averaging 1 cc. per minute, about one-half of the urea is reabsorbed. Therefore, 18 mg. of urea nitrogen must be filtered so that 9 mg. will be excreted in the urine. The filtrate concentration of urea nitrogen is the same as that of the serum (Table 2). One hundred cubic centimeters of a filtrate formed from serum with a blood urea nitrogen (BUN) of 18 mg. per 100 cc. will contain 18 mg. of urea nitrogen, and be adequate to maintain nitrogen balance. If one-half of the kidney should become destroyed by disease, only 50 cc. of filtrate would be formed, and only 9 mg. of urea nitrogen filtered. One-half would be reabsorbed and only 4.5 mg. of urea nitrogen would be excreted. In the course of a day, instead of excreting 13.3 gm. of urea nitrogen, one-half, or nearly 7 gm., would be retained in the body. As a result the BUN would rise. When the BUN had reached 36 mg. per 100 cc. the 50 cc. of filtrate would contain 18 mg. of urea nitrogen, and after one-half was reabsorbed, 9 mg. would still be available for excretion, and nitrogen balance would be restored. Actually, of course, in chronic renal disease the tissue destruction would be quite gradual, and the rise in BUN proportionately slow. BUN of 72 mg. per 100 cc. would be required to filter 18 mg. of urea nitrogen if the filtration rate were only 25 cc. per minute, and BUN of 144 mg. per 100 cc. would be necessary if the filtration rate were 12.5 cc. per minute.

It can be seen that the blood urea nitrogen is reciprocally related to the filtration function. Obviously, if the nitrogen excretory load increases without change in filtration rate, the BUN must also increase so that a greater amount of urea can be excreted in each minute. Therefore, although the BUN level reflects the filtration rate, the exact level depends upon the nitrogen load as well. Both the blood

TABLE 3.—The Relationship of Urinary Urea Nitrogen and Creatinine Nitrogen on High and Low Protein Diets.

When protein content of diet (in grams) is	30.0	100.0
The excretory nitrogen values (in grams) are:		
Urea nitrogen	2.5	13.3
Creatinine nitrogen	0.5	0.5
Miscellaneous nitrogen	0.6	0.8
Total urinary nitrogen.....	3.6	14.6
Fecal nitrogen	1.2	1.4
Total nitrogen exchange.....	4.8	16.0

TABLE 4.—The Relationship of the Serum Creatinine to the Filtration Rate.

Creatinine Mg. per 100 cc.	Filtration Rate Cc. per Min.	Filtered Creatinine Mg. per Min.
1.0.....	100.0	1.0
2.0.....	50.0	1.0
4.0.....	25.0	1.0
10.0.....	10.0	1.0

urea nitrogen and the urinary urea nitrogen can be determined, and the urea clearance calculated. Since the determination of the urinary urea nitrogen indicates the load, calculation of urea clearance eliminates this factor as an unknown variable. However, fluctuations in the ratio of urea reabsorbed to urea excreted, dependent largely upon the amount of water requiring excretion, can be determined only by simultaneous inulin clearance. This further limits the significance and utility of both the BUN and the urea clearance. The nonprotein nitrogen (NPN) is chiefly urea nitrogen, and the amount of it in the blood has a significance comparable to the BUN content, but is less precise, since several substances are excreted by different excretory mechanisms.

Determination of creatinine excretion as a measure of kidney function has several advantages over urea determination. First, the amount excreted depends on muscle mass and is independent of dietary intake (Table 3). Similarly, it is independent of urine flow, since there is no tubular reabsorption. Except in unusual cases, the endogenous creatinine clearance is almost identical with the filtration rate. The normal adult male excretes 1,500 mg. of creatinine per day, or 1 mg. per minute (Table 4). If the serum creatinine is 1 mg. per 100 cc., then the

TABLE 5.—Comparison of Renal Function, Serum Creatinine Level, and Urinary Phenolsulfonphthalein Recovery

Renal Function Approx. Per Cent of Normal	Serum Creatinine Mg. per 100 cc.	PSP Recovery 15 Min. (Per Cent)
100.....	1.0	30.0
50.....	2.0	15.0
20.....	5.0	6.0
10.....	10.0	3.0
5.....	20.0	1.5

filtration rate must be 100 cc. per minute in order to filter 1 mg. of creatinine. If the filtration rate is reduced to 50 cc. per minute, the serum creatinine will rise (due to incomplete excretion) until it becomes 2 mg. per 100 cc., and 50 cc. of filtrate will contain 1 mg., the amount requiring excretion. Ten cubic centimeters of filtrate will contain 1 mg. if the serum creatinine concentration is 10 mg. per 100 cc. If the serum creatinine value is divided into 100 (see Table 4), the approximate creatinine clearance (or filtration rate) can be estimated. This rule has proved to be clinically practical for adult males. Women excrete only 0.6 mg. per minute and the serum creatinine value must be divided into 60 instead of 100.

The serum creatinine determination has proved to be extremely useful in following the progress of function in patients with renal failure, and very small changes in serial determinations have given surprisingly accurate indications of the trend of function. For men, values below 1.0 mg. per 100 cc. have usually been normal, between 1.0 and 1.5 mg. per 100 cc. have been borderline, and over 1.5 mg. per 100 cc. have been almost invariably abnormal. For women similar values have been 0.2 to 0.3 mg. per 100 cc. lower. Muscle wasting may produce deceptively low values. It is wise periodically to determine both the serum and urine creatinine values and to calculate the true creatinine clearance. Almost all the modern methods for determining serum creatinine are of adequate accuracy when carefully performed.

In the author's opinion, the phenolsulfonphthalein (PSP) test, in relationship to the serum creatinine, is less simple to perform and of less value than the relative frequency of use of these tests would indicate. The PSP test is a clearance test. Most of the PSP becomes loosely bound to the serum protein, and therefore very little is filtered. However, at the concentration used, about 60 per cent of the PSP entering the kidney each minute is excreted by the tubules. Although the PSP is excreted by the tubules, the amount excreted depends chiefly upon the amount brought to the tubules—that is, the renal blood flow and blood concentration. With the test as it is usually performed, the very rapid rate of

excretion results in a rapid fall in blood levels and in minute excretion rates. For this reason, the rate of diuresis and the timing of specimens are of critical importance. A number of methods exist for performing the PSP test, especially in the timing of the specimens, and the ranges of normal are variously stated. Exactly the same technique should be used each time. Repeated tests on the same patient may show variations which may not be significant.

The PSP test is also of limited value in advanced renal failure. Table 5 shows a comparison between serum creatinine levels and PSP recovery rates at various levels of function. In advanced failure the spread of the serum creatinine values increases, and fluctuations are technically valid and clinically useful. However, at comparable levels of renal function the PSP values are so low that responses to slight changes in function cannot be reliably detected.

Clearance tests, especially those of normally excreted substances such as urea and creatinine, are valuable because they indicate the manner in which the kidney is actually performing an essential function. However, when an attempt is made to correlate the nature and degree of tissue involvement, all clearance tests suffer certain inadequacies. In early renal disease residual nephrons may hypertrophy, resulting in normal or near-normal performance of the functions tested. Persistence of clinical manifestations, particularly of proteinuria and abnormal urinary sediments, may suggest progressive damage which cannot be measured. Considerable study has been made of different patterns of impairment, singling out the glomeruli, the tubules, or the vascular system as the units of greatest vulnerability to a specific renal disease. The filtration rate is most impaired in glomerulonephritis, the tubular function in pyelonephritis, and the renal blood flow in hypertension. Unfortunately, while these differences are significant when comparing groups, they are unreliable when applied to individuals, and are of limited value in diagnosis. They are most valid early in the disease, when the other clinical manifestations are also of use in establishing the diagnosis, and are less useful later, when the clinical picture becomes that of chronic Bright's disease, without distinction as to the original cause.

The kidney is the only organ which can actively regulate the amount of body water. This it does by concentrating and diluting the urine in relation to the concentration of the solutes requiring excretion. It should be borne in mind that osmolarity is related to the number of particles in solution, while specific gravity is related to the weight of the solution. With an average diet, the ratio of specific gravity to osmolarity has almost a linear relationship. If the urine contains glucose or protein, the specific gravity

increases more rapidly than does the osmolarity, due to the large weight of the additional solute molecules, and appropriate corrections must be applied. The ability of the kidney to concentrate and dilute urine is related to the ratio of the osmolarity of the urine to the plasma, and is only incidentally related to the specific gravity. Equipment for determination of osmolarity is still beyond the reach of the average clinical laboratory. However, determination of the specific gravity is clinically practical, especially if the proper corrections are applied. The serum osmolarity averages 310 milliosmols per liter (Table 6). The maximum urinary osmolarity is of the order of 1,000 milliosmols per liter. Since the average daily solute load is about 1,000 milliosmols, the normal kidney can excrete this load in one liter of urine. A kidney unable to concentrate urine beyond serum osmolarity requires over three liters of urine to excrete the same load. Naturally, reduction in the solute load, by reducing protein or salt intake, reduces the minimum amount of water required. The minimum amount of urine therefore depends upon both the solute load and the ability of the kidney to concentrate urine.

The ability of the kidney to dilute urine appears to be a separate process from the ability to concentrate. It has been stated that the function of dilution persists longer than does that of concentration in progressive renal failure, but there is little quantitative data to support this impression. The maximum amount of urine is defined by the solute load and the ability of the kidney to dilute urine. It is common clinical practice to "force fluids" in all types of renal disease except acute renal failure. However, if the kidney cannot excrete a diluted urine, some excess water is retained with resulting reduction of plasma osmolarity and symptoms of water intoxication. The tolerance of the patient to fluids is often the best guide to hydration in renal failure.

A number of years ago Hayman and co-workers² showed that the urinary specific gravity became fixed when one-half of the nephrons were destroyed. They also demonstrated that at this level of nephron destruction, the filtration rate had only been reduced 20 per cent, probably because of hypertrophy of the residual nephrons, as pointed out previously. Qualitatively, the experience of the author has been in general accord with this observation, and depression in maximal concentrating ability, in the absence of demonstrable reduction in clearance, may be interpreted as the first sign of renal functional impairment. Obviously, once the specific gravity becomes fixed, it no longer serves as an index to general functional capacity. Therefore, concentration tests are of little value late in renal disease, and they must be used cautiously because of the possibility of precipitating a uremic crisis.

TABLE 6.—The Urine Volume Required to Excrete 930 Milliosmols of Solute at Varying Concentration

Specific Gravity (Approximate)	Milliosmols per Liter	Urine Volume (Milliliters)
1.030.....	930	1000
1.020.....	620	1500
1.015.....	465	2000
1.010.....	310	3000
1.005.....	155	6000

TABLE 7.—Serum Creatinine and Blood Urea Nitrogen Values in Terminal Phase of Chronic Uremia in Men.

Serum Creatinine Mg. per 100 cc.	Per Cent of Cases	Blood Urea Nitrogen Mg. per 100 cc.	Per Cent of Cases
0-4	0	0-50	0
4-8	9	50-100	13
8-12	36	100-150	53
12-16	38	150-200	21
16+	17	200+	8

Except in acute renal failure and in total lower tract obstruction, there is no sudden shift from normal kidney function to renal insufficiency. The process is usually a very gradual one, often with evidences of remission as well as of further deterioration. Therefore it is essential to select a small battery of tests which lend themselves to frequent repetition. The answers to the questions posed earlier in this discussion often cannot be answered well, or with certainty, until after the lapse of a period of time during which the tests have been performed with appropriate frequency. Table 7 indicates the serum creatinine and urea nitrogen values in a group of adult males just before death, and provides a basis for predicting the termination of the disease. In women the values would be somewhat lower. It is of interest that, in chronic uremia, death rarely occurs until the hemoglobin has fallen below 10 gm. per 100 cc. of blood. In about 75 per cent of cases the hemoglobin falls below 8 gm. per 100 cc. and over half of these individuals die within six weeks.

The technique devised by Addis¹ for the evaluation of the progress of renal disease has proved simple and effective: For the entire 24 hours before he is to go to a laboratory for the final steps in the test, the patient is on a dry diet unless there is evidence of advanced uremia. He avoids passing urine for several hours before 9 p.m. so that at that time he is then able to empty his bladder completely. This urine is discarded. All subsequent urine is collected, including the first in the morning, which is passed as close to 7 a.m. as possible. The exact time each is passed is noted. He then takes the urine to the laboratory as early as possible, and at the lab-

oratory a specimen of blood is drawn. An Addison count and an estimate of the 24-hour protein excretion can be made from the timed urine, and the specific gravity determined. The blood can be analyzed for hemoglobin, creatinine, and protein (by the simple copper sulfate drop method). By determination of the creatinine in the timed urine, and using the serum creatinine value, it is possible to calculate the creatinine clearance. With these tests

the course and prognosis of a case of chronic renal disease can be accurately followed.

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A.M.E.F. Will Distribute Its Own Funds

THE BOARD OF DIRECTORS of the American Medical Education Foundation recently voted to distribute all funds it raises directly to the medical schools instead of first transferring the monies to the National Fund for Medical Education. Following is a statement of policy defining the reasons for this action.

*Statement of Policy on Relations Between
American Medical Education Foundation and
National Fund for Medical Education
Adopted by
American Medical Education Foundation
June, 1956*

The American Medical Education Foundation was organized in 1951 by officers of the American Medical Association and other leaders within the medical profession. Its purposes were to determine the financial needs of the medical schools and to distribute funds raised by the Foundation to meet these needs.

Since 1951, the Foundation has transferred the donations it has received to the National Fund for Medical Education for distribution to the medical schools. This action was taken as a concrete gesture of financial support for the National Fund.

The National Fund for Medical Education, conceived in 1949, has enjoyed a consistent growth during the past six years. Its objective, that of securing financial support for medical schools from industry and other segments of society, has been promoted by a federal charter, and the recent grant of the Ford Foundation.

At its meeting in Chicago, June 14, 1956, the Board of Directors of the American Medical Education Foundation reviewed its accomplishments and its relations with the National Fund. It recognized the difference in motivation between donors to the American Medical Education Foundation and donors to the National Fund. Physicians who contribute to the support of the American Medical Education Foundation are all graduates of medical

schools. Each individual has a sense of loyalty toward some one of the schools. An increasing number of physicians have expressed a desire to designate the school to which the donation shall be made.

Fund raising for medical education has now passed through what may be termed its preliminary phase. The situation now ought to be reevaluated. There is need to stimulate the fund raising potentialities of both organizations, particularly in the case of the American Medical Education Foundation. The contributions made to the National Fund by industry have now reached a level of more than 50 per cent of the total amount contributed to both organizations. This will act as a stimulus to the Foundation. On the other hand, if contributions to the Foundation are increased, it will be of great assistance to the fund raising potentialities of the Fund.

Because of the necessity of effecting closer relationships with alumni funds, and because it would stimulate contributions to the Foundation if these contributions were more effectively publicized, the Board of Directors of the American Medical Education Foundation have decided to discontinue the present method of distributing A.M.E.F. funds through the National Fund. Henceforth the American Medical Education Foundation will distribute funds directly to the medical schools. Arrangements will be made, however, to distribute the grants simultaneously with the National Fund program. Furthermore, full information will be furnished the National Fund regarding the American Medical Education Foundation project so that the Fund may utilize the information in stimulating continued cooperation from industrial and other donors in attaining the common objective of both organizations.

It is believed that these new arrangements will result in furthering the effectiveness of both organizations and at the same time bring about closer cooperation with the alumni funds.

Tuberculosis Organisms Resistant to Drugs

The Incidence and the Rate of Relapse Among Patients

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THIS IS A STUDY that was ordered by the Program Policies and Trends Committee of the California Tuberculosis and Health Association. The committee is primarily interested in looking ahead to investigate some of the new problems and unmet needs in the tuberculosis control plans of the future.

Improved surgical techniques and modern drug therapy have resulted in a pronounced shortening of the hospital stay of patients with tuberculosis. An increasing trend toward home care has also contributed.

Persons who have had this disease are living longer than they used to. This increased length of life and the care of patients at home, plus drug therapy which nearly all patients receive, have created problems of their own. Two of those problems studied here are:

1. The incidence of hospitalized patients in whom the tubercle bacilli are resistant to antituberculosis drugs on first admission.

2. The rate of relapse among tuberculous patients who have been discharged previously from any tuberculosis hospital.

PLAN OF STUDY

A questionnaire requesting information concerning admissions, discharges, evidence of drug-resistant organisms in sputum, and relapse rates was sent to 15 tuberculosis hospitals and sanatoria in California. They represented a total of 4,121 beds among the state's approximately 11,500 beds for tuberculosis.

To obtain a valid sample, a small research hospital, a large county hospital, a group of medium sized county sanatoria and a private hospital were included.

Four specific questions were included in the questionnaire. They were:

1. What is the incidence of patients who have left your hospital for any reason whatever and who have a positive sputum?

2. What is the incidence of patients *discharged* with positive sputum whose sputum possesses or-

- In a study carried out under the sponsorship of the California Tuberculosis and Health Association, 15 institutions for tuberculous patients were sent a questionnaire to obtain information regarding drug resistance studies on positive sputums of new patients and data on the readmission rate to tuberculosis hospitals.

The results of these studies showed that the problem of drug resistant tubercle bacilli is sizable and important. In this study it was larger than has been reported by other investigators. The average readmission rate for the tuberculosis institutions covered in this study was 19.2 per cent—but many of the patients left the hospitals against medical advice.

ganisms resistant to one of the antituberculosis drugs and to which drug(s)?

3. What is the incidence of patients *admitted* to your hospital for the first time with positive sputums, whose organisms are found to be drug-resistant to one or more antituberculosis drugs, and to which drug(s)?

4. What is the percentage of patients admitted to your hospital after having once been discharged from any institution as inactive?

To ascertain whether other, similar investigations might be under way, or whether similar information might be available, inquiries were directed to the United States Public Health Service, to the Veterans Administration and to the National Tuberculosis Association. These sources indicated that they had no knowledge of any other similar study and that no nationwide data are available on relapse rate or on sputum status of patients admitted to hospitals.

However, in 1955, Chaves and co-workers² reported on 898 patients observed by physicians in the New York City Department of Health in a period of 18 months. M. tuberculosis was demonstrated by culture of the specimens of 385 patients. Of the 43 patients (11 per cent) from whom strains were isolated which showed any degree of resistance to streptomycin or isoniazid, only 15 (3.9 per cent) were significantly resistant. These 15 made up about 1.7 per cent of the total series of 898.

Beck¹ reported ten cases of pulmonary infection with drug-resistant tubercle bacilli in a five-year study of 600 cases of newly diagnosed tuberculosis.

¹Submitted July 23, 1956.

TABLE 1.—Total Number of Patients Discharged from 15 Hospitals Included in Survey Showing Number and Rate of Discharges of Patients with Sputum Positive for Tubercle Bacilli.

Institution No. Type	Total Number of Beds	1954 Total Discharges	1954 Total Discharges with Positive Sputum*	Per Cent of Discharges with Positive Sputum
1. County	1,144	1,430	153	10.7
2. Veterans Administration	602	958	190	19.8
3. Multi-county ..	550	551	86	15.6
4. County	422	823	233	28.3
5. County	262	373	16	4.3
6. County	266	295	53	17.9
7. County	160	74	7	9.4
8. County	123	222	62	27.9
9. Private†	120	137	17	12.4
10. County	105	144	6	4.2
11. Bi-county	105	160	9	5.6
12. Multi-county ..	75	160	3	1.9
13. Private	67	164	38	23.2
14. Private	60	54	3	5.5
15. Private	20	14	3	21.4
Total	4,121†	5,559	879	15.8
				Range—1.9 to 28.3

*Discharges herein include 53 patients reported transferred to another institution for further treatment.

†For year 1954. By April 1, 1955, total number beds available in these institutions dropped 93 beds, or to 4,028.

‡Figures reported for this institution are for period Sept. 1, 1954 to Aug. 31, 1955.

TABLE 2.—Incidence of Patients Admitted to Four Institutions with Positive Sputum in Whom Organisms Were Resistant to One or More Antituberculosis Drugs.*

Institution Number	Total First Admission 1954	Total First Admissions, Positive Sputum and Drug Resistant	Per Cent Positive Sputum and Drug Resistant
3	377	45	11.9
5	160	15	9.4
7	67	17	25.4
13	158	12	7.6
Totals	762	89	11.7

*Includes all drugs.

This is about 2 per cent of the 480 who had positive sputum, or 1.7 per cent of the 600 studied.

Among a total of 5,559 patients discharged from 15 institutions in 1954, 879 had sputum positive for tubercle bacilli at the time of discharge. This represents 15.8 per cent of the total number discharged during that period. The lowest rate for any of the 15 institutions was 1.9 per cent and the highest was 28.3 per cent. Many of the discharges were, of course, against medical advice. (See Table 1.)

During the calendar year 1954, the 15 institutions reported a total of 1,116,363 patient days, with an average length of stay of 240.8 days. The latter figure reflects the trend toward a shorter hospital stay. Although an average length of stay of 240.8 days was reported, it should be noted that the range was from 72.7 to 480 days. This wide difference

reflects in part the types of institutions included in the study, from a small research hospital to a large, multi-county institution.

Table 2 shows the number of sputum-positive patients admitted to four institutions who were found to be also resistant to one or more of the antituberculosis drugs. It is significant that, at the time of this study, only four of the fifteen institutions included reported that drug sensitivity tests were being conducted. For those four hospitals, the total number of patients admitted during 1954 was 762, of which 89 (11.7 per cent) had positive sputum with organisms resistant to one or more antituberculosis drugs. In the original study plan, information regarding drug resistance among patients discharged was also requested, but only one institution had such information available.

The four institutions reporting as having conducted drug sensitivity tests during 1954 had a total of 762 first admissions in that period (Table 3). Of these 762 patients, 13 (2.4 per cent) were found to be resistant to para-amino salicylic acid, 26 (3.4 per cent) to isoniazid and 34 (4.5 per cent) to streptomycin.

Thus, 7.9 per cent of the total number of patients admitted were found significantly resistant to isoniazid or streptomycin. This is about four times the incidence reported by both Chaves and Beck (1.7 per cent of each total series studied).

As shown in Table 4, ten of the 15 institutions reporting submitted complete data relative to the number of patients admitted who had been discharged from any tuberculosis institution previously with disease classified as inactive. These ten institutions admitted 4,081 patients for a total of 5,754 admissions during the year 1954. Of the total number of patients admitted 782 (19.2 per cent) were reported as having been discharged from some tuberculosis hospital previously with disease inactive. The rate of relapse among patients admitted to these ten institutions in 1954 is, therefore, 19.2 per cent. This is significant when it is realized that approximately one of every five patients admitted was said to have recovered from tuberculosis previously.

These data are probably not accurate, as the patient's word was taken for the diagnosis at the time of previous discharge diagnosis. Some patients may have been ignorant of the previous discharge diagnosis, while others may have been just a little bit forgetful. These factors are particularly ponderable in patients who leave against medical advice.

DISCUSSION

The authors were delighted that hospitals representing so large a number of beds cooperated in this study. Other institutions were addressed but did not

TABLE 3.—Number of Admissions to Four Institutions of Sputum-Positive Patients with Organisms Resistant to Para-amino Salicylic Acid, Isoniazid, or Streptomycin.*

Institution Number	Total First Admissions 1954	Admissions Sputum Resistant to Para-amino Salicylic Acid		Admissions Sputum Resistant to Isoniazid		Admissions Sputum Resistant to Streptomycin	
		No.	Per Cent	No.	Per Cent	No.	Per Cent
3.....	377	11	2.9	17	4.5	21	5.6
5.....	160			1	.6	2	1.2
7.....	67			3	4.5	6	8.9
13.....	158	2	1.3	5	3.2	5	3.2
Totals.....	762	13	2.4	26	3.4	34	4.5

* Based on total first admissions of institutions No. 3 and No. 13.

cooperate, some of them because they did not have the data requested, others for other reasons.

Several interesting facts that are considered significant came to light:

In the 15 institutions reporting, the proportion of patients discharged with sputum positive for tubercle bacilli averaged 15.8 per cent. The range of 1.9 to 28.3 per cent was very wide and the disparity was unexplained. One might hazard the guess that those hospitals having the higher rates also had a high rate of patients signing out against medical advice.

Only four of the 15 institutions reported that they were doing any drug sensitivity tests of positive sputums on entry. No reliable data as to drug resistance could be found for patients who had a positive sputum at the time of discharge.

Drug sensitivity studies are quite important in workmen's compensation cases and from a public health as well as a treatment standpoint. Therefore, more tuberculosis institutions should be encouraged to carry out drug sensitivity studies on the sputum.

The importance of drug sensitivity studies on the bacilli of patients being considered for operation cannot be too strongly emphasized. The significance of present drug resistance studies is not entirely clear, as there are differences of opinion regarding the pathogenicity of some drug-resistant bacilli.

The probability is that as more drugs are used in treating tuberculosis, more resistant strains will be developed. It was found that among patients admitted to the hospital for the first time and who had sputum positive for tubercle bacilli, 11.7 per cent had organisms resistant to one or more anti-tuberculosis drugs.

Much more research is necessary to ascertain the nature of resistant organisms, and to prevent resistance from occurring. Or perhaps a way can be

TABLE 4.—Per Cent of Patients who Were Discharged Previously from Any Institution with Disease Inactive and Admitted to Any of Ten Institutions During 1954.

Institution Number	Admissions 1954		Number Patients Admitted, Previously Discharged from Any Institution as Inactive	
	Total	Number of Patients Involved	No.	Per Cent
1.....	3,034	1,504	131	8.7
2.....	958	960	384	40.0
3.....	561	613	27	5.2
5.....	351	294	78	26.5
7.....	75	75	3	4.0
8.....	234	234	92	39.3
10.....	150	136	33	24.2
12.....	171	145	5	3.4
13.....	158	158	24	15.2
14.....	62	62	5	8.1
Totals	5,754	4,081	782	19.2*

* Average.

found to cause the bacilli to revert to a sensitive state.

There is a sizable proportion of readmittances to tuberculosis hospitals. Perhaps it should not be called a relapse rate, inasmuch as not enough is known about the facts behind previous admissions. In any case, an average readmittance rate of 19.2 per cent seems much higher than it should be. No effort was made in the present study to discover the factors responsible for so high a rate.

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Operations on the Pericardium

A Review of Current Surgical Procedures

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THE PERICARDIUM was the first portion of the heart to be successfully treated surgically, and important advances in pericardial surgery are continually being made. The surgeon is principally concerned with the profound physiological disturbances brought on by trauma, infection and tumors. However, in recent years various operative techniques have been devised that utilize the overlying pericardial fatty tissue and the fibrous pericardium in a number of plastic, reinforcing and vascularizing procedures.

Acute Cardiac Tamponade

The rapid accumulation of fluid in the pericardial cavity that occurs in acute cardiac tamponade may be the result of trauma, of inflammation or of infection. Since the pericardial sac is a tough, fibrous membrane, it does not distend rapidly. The increased intrapericardial pressure soon compresses the thin walled vena cavae and auricles with a resultant rise in the venous pressure. If the intrapericardial pressure rises higher than the venous pressure, then the blood cannot reach the heart and the circulation stops. However, if the venous pressure can be maintained, the circulation will then continue.

In trauma to the heart and pericardium, the diagnosis is suspected by evidence of a wound from a penetrating weapon or missile that could possibly have entered the pericardium and a series of symptoms which have been classically described by Beck.⁵ These include: (1) A small quiet heart (the sounds muffled by a layer of blood in a nondistensible pericardium), (2) falling blood pressure (from failure of the heart to fill and decrease in the volume flow), and (3) increased venous pressure (above 6 to 8 mm. of mercury). The diagnosis is not difficult when one keeps the salient points in mind; it is regularly made on the surgical services at the Los Angeles County General Hospital. Removing 100 cc. or even 50 cc. of blood from the pericardium may be life-saving. For pericardiocentesis, approach from below the xiphoid process is preferred, although in stocky or obese and thick chested persons aspiration

• Improved management of pericardial disease has resulted from a better understanding of the pathological physiology and refined surgical technique.

In acute cardiac tamponade from trauma, our experience has shown that simple pericardial aspiration, because it relieves the tamponade, renders open operation unnecessary unless the hemorrhage is unusually severe. However, in chronic tamponade, from prolonged pericardial bleeding or effusion, the "pericardio-pleural window" operation described in this article will safely decompress the pericardium without secondary infection and the necessity of reoperation. With chronic constrictive pericarditis, on the other hand, catheterization studies reveal that left heart constriction is more important than that of the right heart or vena cavae. So it is important to pay more attention to decortication of the left heart than was formerly believed.

Excision of pericardial tumors, most often cystic, is indicated because they are indistinguishable from malignant growths, although they in themselves are not of serious import.

Fatty and fibrous pericardium have proved to be suitable viable material for various plastic operations on the heart, lung and esophagus. Finally, experience with poudrage to revascularize the myocardium is proving that this is a very satisfactory technique which can be performed with minimal risk.

through the left peristernal fifth intercostal space may be simpler.

Although decompression of hemopericardium from stab wound has been practiced since the first successful case of Baron Larrey in 1829,³ a vogue for immediate exploration grew up in this country prior to World War II.¹³ In recent years it has been the author's experience that needle aspiration of the pericardium is sufficient to control the intrapericardial hemorrhage from small stab wounds in most instances. If more than two or three aspirations are necessary in the early hours after admission, or if there are signs of continued hemorrhage, then there is an indication for immediate surgical exploration.⁷ Small pericardial wounds are seen primarily in civilian life and are extremely rare in military experience. Small stab wounds can be safely dealt with by conservative pericardiocentesis; larger ones are either immediately fatal or should be treated by

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prompt surgical intervention, for death can occur quickly from rapid exsanguination externally or into the pleura, from damage to the coronary arteries, from injury to the conducting system or the heart itself and cerebral anoxia. Furthermore, if a sufficient tear is made into the pericardial sac to connect it with the pleural cavity, the signs are those of hemorrhage and not of pericardial tamponade, for the pericardium is decompressed into the pleural space. Thus the ability to diagnose acute cardiac tamponade and to perform immediate aspiration of the pericardial sac will prove lifesaving in the majority of cases of small wounds of the pericardium. In rapidly occurring cardiac tamponade from acute inflammatory processes, decompression of the pericardial cavity by aspiration may save the patient from death caused by circulatory failure.

Subacute and Chronic Cardiac Tamponade

Persisting pericarditis from hemorrhage or inflammation of the pericardium results in a subacute or chronic form of cardiac tamponade. The author considers this is a distinct clinical entity which is an intermediate stage between acute tamponade and chronic constrictive pericarditis. The venous pressure is elevated, the heart sounds are distant and the blood pressure is maintained at a low or near shock level. As distinguished from acute cardiac tamponade, the cardiac dullness is considerably increased and a huge "water-bottle" type of cardiac silhouette is seen on x-ray examination. This diagnosis should always be considered in obscure cases of cardiomegaly. Withdrawal of the fluid relieves the tamponade and injection of air will give a characteristic pericardial fluid level and show the thickness of the pericardium.

Although repeated aspirations and injections into the pericardial cavity of appropriate antibiotics (as determined by culture of the pericardial fluid and sensitivity tests) may be effectual, more often it is necessary to resort to a relatively simple operation, entailing only minimal operative shock, which can be called the "pericardio-pleural window operation." Through a short anterior incision in the fifth intercostal space with the patient in the supine position, the pericardium is exposed. Through a small stab incision the pericardial sac is decompressed gradually, to prevent cardiac irregularities that would be brought about by sudden change in pressure in the pericardial cavity that would occur if there were a rapid outpouring of the fluid. The window is made above the diaphragm by excising a section of pericardium 6 to 8 cm. in diameter. The small flap of pericardium is fashioned and the pleural surface is sutured to the inner pericardial layer to insure the persistence of the pericardial window. This permits a constant escape of pericardial fluid into the pleural

cavity which, in turn, is drained by a posteriorly placed catheter connected to a closed drainage system. The chances of secondary infection are minimized and adequate pericardial decompression is constantly maintained. The author has used this operation since 1946 in cases of traumatic hemopericardium as well as subacute and chronic infection. In no instance did chronic adhesive pericarditis develop and the cardiac silhouette rapidly returned to normal and remained so when checked years later. The operation is not technically difficult to perform and can be readily completed on patients who are extremely bad risks with a high degree of success. There is very little reference to this procedure in the medical literature,^{21,25} but the author believes that it should have a wider clinical use.

Purulent Pericarditis

Because of the efficacy of the present-day powerful antibiotics in combating infection generally in the body, purulent pericarditis is rare. Most often, subacute or chronic effusion results from an attenuation of organisms producing the syndrome previously described. In cases where the purulent effusion is not influenced by the antibiotics and by aspiration for withdrawal of fluid, then extrapleural open drainage through the wall of the chest is indicated, provided tuberculosis is not present. In tuberculous purulent pericarditis, streptomycin-isoniazid and para-aminosalicylic acid should be used intensively and the pericardio-pleural window operation should be done early. Complete decortication of the pericardium may be avoided by early use of the operation.

Chronic Constrictive Pericarditis

When pericarditis from infection or trauma becomes chronic and when the previously mentioned methods of aspiration and "pericardio-pleural window operation" have not been employed, chronic constrictive pericarditis is the usual outcome. The heart is encased in a tough fibrous membrane from 2 to 15 mm. or more in thickness, often calcified, which contracts and greatly limits or "constricts" the cardiac action. This clinical entity, which has been recognized since the turn of the century, is too often not diagnosed until very late in the course of the disease. The signs and symptoms leading to diagnosis are a decidedly elevated venous pressure (usually more than 18 to 20 cm. of water), a small quiet heart without characteristic murmurs, frequently ascites, large liver and pleural effusion.⁵ The electrocardiogram shows characteristic changes; and if cardiac catheterization is done—although usually not necessary—typical pressure curves in the right ventricle will be noted.

Cardiac catheterization has been especially helpful in explaining the abnormal physiologic pattern, which in turn has led to more satisfactory surgical treatment. It was formerly held that the elevated venous pressure resulted from mechanical constriction of the superior and inferior vena cavae by the fibrous pericardium, with decrease of inflow of blood into the heart. In cardiac catheterization studies, however, no increase in pressure gradients between the vena cavae and the right atrium has been observed. Furthermore, the lack of increased gradient between the right atrium and the right ventricular and diastolic-end pressure rules out constriction of the atrioventricular groove as the cause of elevated peripheral venous and right atrial pressure.^{20,28} It is the author's belief that the cause of the characteristic signs and symptoms of constrictive pericarditis is the constrictive effect of the fibrous pericardium upon the left ventricle and, to some extent, the right ventricle. Clinically, considering the better results obtained with adequate left ventricular decortication, it is apparent that constriction of the left ventricle is a more important factor than constriction of the right. This profoundly affects the surgical treatment, for instead of concentrating upon freeing the vena cava and the auricles, and searching for "atrioventricular bands," operation can be directed first to freeing as much of the left ventricle as possible, then the right ventricle. Even if the vena cava and auricles cannot be completely freed, a satisfactory result will be obtained in most instances. In fact, in some of the earlier cases in which the author used this procedure, attention was directed primarily to the right side of the heart with emphasis on freeing the vena cava and right auricle, for on the basis of clinical, fluoroscopic and roentgenkymographic examination it was believed that these structures were the ones principally involved. It was not until it was realized that the left heart, particularly the left ventricle, was more important and surgical attention was directed to complete freeing of this side of the heart that these patients were finally cured.

Operation should be carried out as soon as the diagnosis can be made and the patient brought to the best condition for it, since the prognosis without operation is bleak. The longer the constriction exists, the greater will be the myocardial damage and secondary degeneration of the lungs, liver and kidneys. Temporary improvement can be obtained by careful medical regimen, but relapses and eventual progression of the disease will occur.

A bold approach to the pericardium should be made even though it involves entrance into one or both pleural cavities. The limited extrapleural "hockey-stick incision" does not give sufficient exposure. Either a vertical sternal-splitting incision²²

or a lateral trans-sternal incision entering both pleural cavities¹⁹ is more satisfactory. A long left lateral fifth intercostal space incision may be utilized, the surgeon opening the left pleural cavity⁸ and extending the incision across the sternum if necessary. The lateral incision gives excellent exposure of the left side of the heart and both ventricles. The left ventricle is freed first from the phrenic nerve to the pulmonary veins, then the anterior surface of the heart over the right ventricle is liberated, and finally the auricles and vena cavae are decorticated, if possible. Failure to free these latter structures has not mitigated the final results in the patients operated upon by the author, provided the angiograms before operation did not show the extremely rare primary venacaval obstruction. Decortication of the heart for chronic constrictive pericarditis is a highly successful operation when a satisfactory freeing of the heart is technically possible and if irreparable myocardial, liver or renal damage is not present. Certainly the longer the operation is delayed the poorer the chances for a successful result.

Congenital Defects

Congenital defects of the pericardium are rare and may be associated with ectopia cordis or exist as single lesions. Operation for ectopia cordis has usually been unsatisfactory¹² although closure of what is primarily a sternal separation as soon as possible after birth may be successful.²⁴ The absence of portions of the pericardium with the heart in the intact chest is more an anatomical abnormality than a clinical entity and has been reported in 68 instances.^{4,28} Since the heart functions well without the pericardium, it is only when the heart has herniated through the defect and strangulation takes place that any clinical symptoms arise. So far as could be determined, no such congenital case has been reported. However, this syndrome has developed following partial pericardectomy for carcinoma of the lung and it must always be kept in mind by a surgeon who is removing a portion of the pericardium. Either the pericardium must be closed enough to prevent herniation of the heart or a wide excision of the pericardium should be effected so that it is impossible to have any strangulation from displacement of the heart during coughing or straining. The risk of pleural pericardial infection which was feared by an earlier generation of surgeons is minimal with present antibiotic therapy.

Tumors of the Pericardium

Benign new growths of the pericardium, in the author's experience, are primarily pericardial cysts. Over a hundred of these cases have been reported.^{9,26} In the main they cause no special symptoms. Removal of them is indicated, for they are indistin-

guishable from potentially malignant mediastinal neoplasms and from bronchogenic carcinoma. They may be excised with very little risk to the patient; there has been no mortality or ill effect reported resulting from removal. Primary teratoma, lipoma and angiomas, although rare, have been reported successfully resected.^{16,18} Planigrams and angiograms are most helpful in distinguishing these tumors from aneurysms. Malignant tumors of the pericardium occasionally arise in the pericardium itself; secondary involvement from malignant tumor arising elsewhere or in the heart itself is fairly frequent.²³ Usually by the time the diagnosis is made, complete eradication of the neoplasm cannot be anticipated unless it is a lesion of one of the extremely radiosensitive types (lymphoma group). Not uncommonly a persistent pericardial effusion of obscure cause is present. In such cases transpleural pericardial exploration should be carried out with the intent of decompressing the pericardium through a "pericardio-pleural window." In the event that malignant disease of the pericardium is found, the decompression of the cardiac tamponade will afford great symptomatic relief even though complete cure is, of course, not possible.

Foreign Bodies in the Pericardium

Foreign bodies in the pericardial sac should be removed if they are found to be a nidus of infection or large enough to cause erosion of the myocardium. At one time it was felt that all foreign bodies in the pericardial sac should be removed, if possible, because of the danger of future erosion of the heart. A number of successful excisions have been reported.^{17,31} In a large series of major thoracic wounds treated in World War II by an Auxiliary Surgical Group, foreign bodies of the pericardium were removed in four of seven cases in a total of 57 cases in which the heart or pericardial sac was involved.¹⁴ Only recently, experimental work¹⁵ has shown that small foreign bodies in the pericardium tend to be surrounded by fibrin and scar tissue and cause little if any damage in the pericardial sac or myocardium. Excising them, therefore, is indicated only if they are very large or found to be a source of bleeding or infection.

Surgical Uses of Pericardial Tissue

One of the most interesting developments in thoracic surgery has been the use of pericardial tissue in various intrathoracic procedures which may be outlined as follows:

1. Pedicled pericardial fat graft as reinforcing tissue
 - (a) Tracheobronchial resection and plastic operations
 - (b) Esophageal operations

2. Pericardium as a vascularizing media to myocardium
 - (a) Pedicled pericardial fat graft to myocardium
 - (b) Development of vascular intrapericardial adhesions
3. Fibrous pericardium as reinforcement
 - (a) To reinforce myocardium in trauma and aneurysms
 - (b) Operative tunnels
 - (c) Valvular leaflet "slings"
 - (d) To reinforce diaphragm.

Considerable experience has now been had in the use of pedicled pericardial fat graft first employed by the author and his associates in 1951.^{10,11} This graft protects the stump of the bronchus in pulmonary resection or the suture line in tracheal and bronchial graft and plastic operations and the incidence of bronchial fistula is almost negligible. Furthermore, these grafts have been found to be viable for periods of three years after implantation in patients. They may be used to reinforce intrathoracic esophageal anastomosis and reparative operations. Vineberg³⁰ recently used this tissue as a means of vascularizing the myocardium. The early results of this procedure for improving the blood supply to the myocardium are encouraging. Long time follow-up studies are not available.

There is considerable current interest in the vascularizing of the myocardium by the method of producing vascular intrapericardial adhesions after the method first described by Beck.^{6,29} Although there is still controversy over the permanent increase in blood supply so effected, a sufficient number of patients have obtained symptomatic relief to warrant further trial of this method. The pedicled pericardial fat graft may be used simultaneously with the "Beck I procedure."

Fibrous pericardium has been used either in the fresh state as a homograft or as "freeze-dry" preparations to fashion operative tunnels² which offer a safe approach to aortic valve or cardiac chambers. These grafts may be used when the auricular appendage has been obliterated and reoperation on the mitral valve is necessary. Fibrous pericardium has been found to be very satisfactory for these uses. When used as a grafting material to provide substitute leaflet or "sling" in mitral insufficiency¹ the ultimate fibrosis and contraction of the fibrous pericardium has been disappointing. On the other hand, this material has been successfully employed to reinforce the myocardium in trauma and wounds of the heart as well as myocardial aneurysm. In repairing a diaphragmatic hernia the author has turned down the entire left side of the pericardium as a graft to reinforce a flabby diaphragm that was

too weak to be repaired. Since it has an excellent supply of blood, pericardium makes a viable sturdy substitute for a congenitally absent diaphragm.

DISCUSSION

Operations on the pericardium are based on very accurate diagnosis and fundamental knowledge of pathological physiologic characteristics. The operative procedures presented have been carried out without elaborate cardiac bypass or heart lung machines. Although the author has not used hypothermia in the operations for relief of constrictive pericarditis or for revascularization of the myocardium, experience in operations for other cardiac conditions indicates that this anesthetic adjunct should be recommended for bad risk cases. With the intensive effort that is now being focused upon cardiac vascular research, continued refinements of these techniques can be expected.

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Intravenous Cholangiography

Some Observations on the Use of Cholografin

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ATTEMPTS to visualize the biliary ducts other than by direct cholangiography were largely unsuccessful until the introduction of biligrafin in Germany in 1952. In the United States, this contrast medium has been named cholografin. It is the dinatrium salt of an adipine acid and has an iodine content of 64.3 per cent. The medium is prepared in 20 cc. vials of 20 per cent concentration for intravenous use. This concentration is almost isotonic. It is estimated that in the normal person 10 per cent of the dye is excreted by the kidneys and the remaining 90 per cent by the liver through the biliary duct system. There is practically no liberation of free iodine within the body. Once the contrast material reaches the intestines by way of the bile ducts, it is not reabsorbed.^{5,6,7}

METHOD OF EXAMINATION

The patient is prepared by administering two ounces of castor oil the evening preceding the examination, with fasting after midnight, and administration of a cleansing tap water enema in the morning. One cubic centimeter of the contrast material is given intravenously as a test for sensitivity at least ten minutes before the procedure. A scout film of the right upper quadrant of the abdomen is made and technique adjusted accordingly. Although a 40 per cent concentration of the contrast material is now available, only the 20 per cent concentration was used by the authors. The drug should be injected very slowly over a 10-minute period and this has proved to be more difficult with the smaller volume. Slow injection is stressed by the manufacturer, since untoward reactions in general seem to be directly related to the rapidity of administration.

Films are taken at 20, 30, 40, 60, 90 and 120 minutes following the injection. The right posterior oblique projection is used at various degrees of obliquity as indicated after viewing the films during the course of the examination. In the experience of the authors, the common bile duct will almost always

• Intravenous cholangiography with cholografin is a safe procedure, most useful for the study of patients who have had cholecystectomy and later have symptoms related to the biliary ducts.

When jaundice or liver impairment is present, the examination is usually unsuccessful. However, these conditions are not absolute contraindications to the procedure. There may be failure to visualize the biliary ducts even in the presence of a normal liver.

Planigraphy is helpful in eliminating confusing superimposed structures and when there is only faint visualization of the common duct.

Intravenous cholecystography is only of questionable value as a supplementary examination to oral cholecystography. It may prove useful in certain instances when patients are unable to retain or absorb the oral media or where emergency operation is contemplated.

be visualized within the two-hour period or not at all (Figure 1). However, in one case an obstructed and greatly dilated common duct was observed on a 24-hour examination (Figure 2). Therefore a 24-hour film is taken whenever there is failure to visualize the biliary ducts at the end of two hours. Wise and O'Brien⁸ also said they obtained a 24-hour film because of one instance in which a previously nonvisualized gallbladder was well demonstrated at 24 hours.

Planigraphy has been useful where confusing superimposed structures are present or when the duct is only faintly opacified.

The administration of morphine shortly before the beginning of the examination has been advocated as a means of producing contraction of the sphincter choledochus and hence increasing the concentration of the medium in the common duct.⁴ The authors have not used this method up to the present, feeling that the facility with which the common duct emptied was of equal importance. Now, however, we are not certain but that better opacification is more desirable.

VISUALIZATION OF BILIARY TREE

The suggestion has been made that intravenous cholecystocholangiography might serve as a test of liver function. It is true that in the presence of liver

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Figure 1.—Normal intravenous cholangiogram.

impairment or jaundice, failure to visualize the biliary structures can be expected; however, it cannot be anticipated with any degree of certainty. In 50 of the earlier cases in which the authors carried out the examination, the common bile duct was not demonstrated in 16 instances. In 12 of the 16 the patients were jaundiced or had laboratory evidence of impaired liver function at the time of the examination. In none of the remaining four patients was there a history of jaundice and in the two of these, in whom laboratory studies were done, liver function was normal. In a more recent case, the common bile duct was not visualized on a first examination in which there was no jaundice or evidence of liver impairment. A second examination was done one week later with excellent opacification of a normal appearing gallbladder and common bile duct. Wise and O'Brien noted some correlation of liver impairment and failure to visualize the biliary tract, but they also concluded that the range of abnormal liver function values covers a considerable spread within which visualization cannot be predicted with accuracy. They felt that there was little use in attempting the study if the sulfobromophthalein retention was above 40 per cent or the serum bilirubin over 4.0 mg. We now prefer not to examine patients who are jaundiced or have laboratory evidence of liver damage. If liver function studies are abnormal, we believe that the study should be delayed as long as possible.



Figure 2.—Twenty-four-hour film. Decidedly dilated common bile duct. There was no opacification at the end of the standard initial 2-hour period of the examination. At operation, the duct measured 3 cm. in diameter and contained multiple calculi.

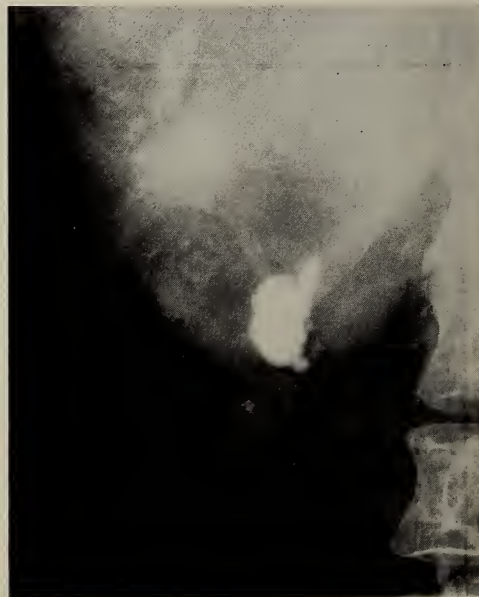


Figure 3.—Dilated common bile duct containing a large radiolucent stone with an opaque central nidus.

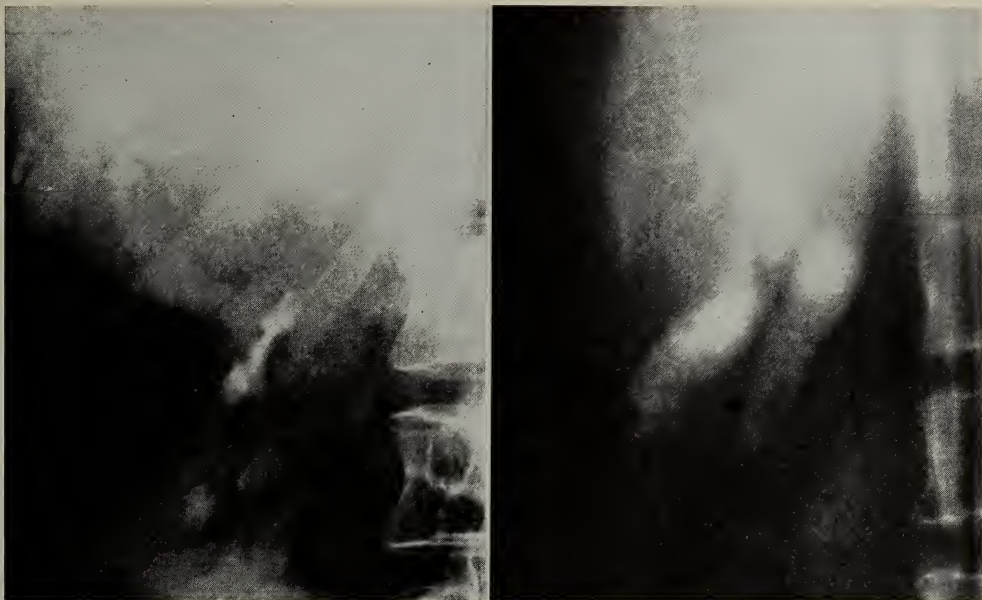


Figure 4.—*Left:* The distal common bile duct is obscured by opacified renal calyces. A calculus could not be demonstrated. *Right:* Planigram. A calculus (arrow) is clearly seen.

CHOLANGIOGRAPHY

What constitutes an abnormal common bile duct? The demonstration of a stone would seem to be an unequivocal pathological finding (Figure 3). The present method has not always proved successful in demonstrating stones; in one case a well visualized common bile duct that appeared normal contained many small stones at operation. Frequently the duct is so faintly visualized that stones cannot be excluded with certainty. Superimposed intestinal gas shadows can be misleading or confusing, but usually can be eliminated by positioning or by planigraphy. We now routinely make planigrams whenever the common duct is poorly visualized. Figure 4* is a case in which a stone in the duct was clearly demonstrated by this means, and the authors observed another similar case.

The diameter of the common bile duct would seem to serve as a useful indication of the presence or absence of obstructive phenomena. However, this presents certain problems. Don and Campbell³ pointed out that following the relief of obstruction, the common duct may not return to normal size and, therefore, the demonstration of a dilated duct does not necessarily indicate obstruction at the time of the examination. In the series reviewed by Berk and co-workers,² the mean diameter of the ducts in patients before cholecystectomy was 6 mm. as com-

pared with a mean diameter of 8 mm. after cholecystectomy, the patients in both groups being asymptomatic. They also compared two symptomatic groups. The mean diameter of the ducts was 6.4 mm. in the precholecystectomy group and 10.6 mm. in the symptomatic postcholecystectomy group. However, it must be noted that these are mean diameters and that there is such an overlap in the range of diameters in these various groups that little reliance can be placed on the size in any individual case. Wise and O'Brien said that in their series all ducts that were explored and that measured over 15 mm. were partially obstructed and all ducts measuring under 8 mm. that were explored were unobstructed. We have observed a number of cases in which ducts between 8 mm. and 12 mm. in diameter were found to be unobstructed at operation (Figure 5). We do not know what the upper limit of normal is but feel that a diameter greater than 15 mm. is probably of significance.

Wise and O'Brien felt that if the density of the common duct did not decrease significantly in the 120-minute film when compared with the 60-minute film, partial obstruction was present. Conversely, a decrease in density would be evidence against a significant obstruction. We feel that, in general, comparison of density in multiple films even during the same study is difficult; however, this observation may prove helpful.

* Courtesy of Dr. Denis C. Adler of Los Angeles.



Figure 5.—Common bile duct measuring 12 mm. in diameter. At operation, there was no evidence of obstruction and the duct was considered to be entirely normal.



Figure 6.—Incomplete mixing of the contrast material and the gallbladder content.

The finding of cystic duct remnants, kinking and distortion of the duct and dilatation above a narrowed segment can be of significance, but must be correlated closely with the clinical findings. In one case in which there was a cystic duct remnant, a duodenal ulcer was present, which, it was felt, accounted for the symptoms. We have seen a number of other cases in which the clinical symptoms could not be attributed to the remaining portion of the cystic duct.

CHOLECYSTOGRAPHY

Intravenous cholecystography has been suggested as a supplementary examination to oral cholecystography when there is failure of visualization of the gallbladder. In view of the high index of accuracy of cholecystography with oral contrast media, we question the value and practicality of such a supplementary examination. Of 27 intravenous cholecystograms reviewed, there were 19 in which the gallbladder was not visualized. This group was among the earlier patients examined by this method, and the number of failures is undoubtedly high because of the increased incidence of jaundice and liver impairment at the time of study. In 12 of the 19 cases in which visualization failed, diseased gallbladders were observed at operation and in one case the organ was normal. In the remaining six of the 19

cases, operation was not done. There were eight cases in which the gallbladder was opacified. In two cases there were demonstrable stones but the patients were not operated upon. In one instance, gallstones were not visualized but stones were found at operation.

Failure to visualize the gallbladder is not felt to be necessarily indicative of obstructed cystic duct or diseased gallbladder. In two instances in the present series there was a normal oral cholecystogram and failure of visualization by the intravenous method. Also, the expense, inconvenience and added risk of injecting a contrast material must be considered. However, preoperative cholangiography in patients about to undergo cholecystectomy would seem to hold some promise in that unnecessary exploration of the common bile duct may be avoided. The authors feel that intravenous cholecystography in general should be reserved for patients who for some reason are felt to be incapable of absorbing or retaining the oral contrast media. Occasionally, it may be indicated in patients in whom emergency operation is contemplated and time is an important factor. A recent example of the latter was a young girl who had been involved in an automobile accident and who was suspected of having a ruptured gallbladder. An intravenous cholecystogram quickly demonstrated an intact gallbladder.

Other problems in interpretation of the cholecystogram can be expected. Reflux of the contrast material into the duodenal bulb¹ or antrum of the stomach may simulate a gallbladder remnant or even the gallbladder itself. Failure of adequate mixing of the contrast material with the gallbladder contents may simulate stones; or, if layering occurs, non-opaque stones may be overlooked. This may be avoided by continuing the examination until maximum concentration and mixing have occurred. Sometimes a zone of increased density adjacent to the gallbladder wall is noted during the course of the examination (Figure 6). This is probably due to incomplete mixing and the ability of the gallbladder to concentrate the material.

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A.M.E.F. Contributions

ON OCTOBER 1 of 1956 the American Medical Education Foundation had received donations of \$587,285 since January 1. This does not include \$130,000 from the California Medical Association which has been voted but will not be transferred until December. This total of \$717,285 compares favorably to the \$540,343 that was "on the books" on October 1, 1955 and assures that in 1956 the Foundation will again have a gratifying increase in income.

It is possible to make real achievement this fall, however. Many states are launching campaigns during the autumn period as they have in years past. These campaigns should result in the normal increase we have enjoyed throughout the year.

But—a dramatic goal is in sight: *One Million dollars for 1956* without the previous years' A.M.A. seed grants. If, across the country, every chairman and committeeman would urge that the contributors in his state add two dollars more to their donation; if every doctor who has given to his school or another charity sends just two dollars more to the Foundation, this *Million Dollar mark* will be reached.

—*American Medical Education Foundation Bulletin*

Vagotomy

Clinical Results, with a Note on Temporary Gastrostomy

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A PATIENT who accepts surgical treatment for peptic ulcer deserves prompt recovery from the operation, immediate relief from symptoms, a reasonable security against recurrences of the disability and restoration to a satisfactory economic social status.

In the past, operation for the treatment of peptic ulcer has been directed toward several objectives. One of these is to increase the patency of the pylorus; another to produce some change in the relationship between the alkaline, duodenal and jejunal secretion and the acid gastric content so that some sort of a neutralization effect is obtained. A third objective has been to actually remove acid stimulating cells by resection, thus lessening gastric acidity. Recently interest has been revived in surgical attacks upon the vagus nerves to effectively alter the ulcer diathesis.¹

Trans thoracic vagotomy was early abandoned because of problems related to gastric emptying. Later vagotomy was combined with gastroenterostomy, with a noticeable improvement in results. In a group of selected cases where the ulcer was ideally placed for removal and where bleeding was a prominent feature of the history a modest lower gastrectomy was combined with vagotomy. More recently pyloroplasty has been utilized as a drainage maneuver, and at present this is regarded as the procedure of choice. Enthusiasm for the operation has steadily increased in the past ten years, and experience with well over 100 patients is the basis of this report.

INDICATIONS FOR OPERATION

In approximately half of the cases there were absolute indications for operation—hemorrhage or obstruction—and in the other half operation was required because conservative treatment had failed. A few patients in the latter group had had previous perforations.

TECHNICAL CONSIDERATIONS

Variation in the results achieved by this operation can only be attributed, in the authors' opinion, to

• Sixty replies to questionnaires sent to more than 100 patients who had had vagotomy for peptic ulcer showed that 93 per cent had satisfactory results. There were no deaths in this series. Three times as many unsatisfactory results occurred in a group of patients who had had gastrectomy. There were no proved recurrent or marginal ulcers in either group.

Vagotomy plus a complementary procedure has proved, in the author's experience, to be the operation of choice in chronic duodenal ulcer. At present gastrectomy plus vagotomy appears to be less desirable than vagotomy plus pyloroplasty or gastroenterostomy.

fundamental defections in technique. In 1929, Hartzell,³ in experiments on dogs, demonstrated in a convincing manner three fundamental points relative to the vagus nerves. The first is that section of both nerves decreases the acidity of the gastric contents. The second is that this section cannot be adequately done unless generous segments of both nerves are removed, and thirdly, that if dissection is technically incomplete the effect is disappointing and transient.

A perusal of anatomic studies indicates clearly that there are enormous variations in the pattern of the vagus nerves as they invest into the cardiac end of the stomach. Skill in this operation can only be achieved through preliminary dissection in the anatomic laboratory. There also must be a willingness on the part of the surgeon to freely mobilize the esophagus and completely encircle it first with the examining finger then with a Penrose drain. Traction upon the drain thus placed produces tension upon the nerves, which aids in identifying them. The nerves appear to be somewhat shorter than the esophagus and are the only attachments that prevent delivery of the lower thoracic esophagus into the abdominal cavity. The anterior nerve is easily identified almost invariably and can be defined with the tip of the index finger. A generous segment is excised and the dissection is extended bluntly well into the mediastinum. More often than not the posterior nerve will have been dissected away from the esophagus at the time of the preliminary maneuver and may lie in the areolar tissue along the right crus of the diaphragm. The success or failure of the op-

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eration may well hinge upon the surgeon's ability to identify this structure. In most instances an experienced associate member of the operating team is asked to make an independent secondary inspection to confirm the completeness of the vagotomy before this phase of the operation is abandoned. Confirmation is further obtained by routine histologic study. In several instances three large trunks have been identified and numerous anomalous communications between the main trunks have also been noted. Generous segments of both trunks—sometimes 7 or 8 cm.—are excised. At the completion of this part of the dissection the esophagus is easily brought into the field, and under direct vision numerous smaller fibers which may be seen embedded in the wall of the esophagus are divided by the dissecting scissors. The presence of an in-lying Levin tube aids in the identification and protection of the esophagus. The esophagus is then returned to its mediastinal bed and, at the completion of pyloroplasty, gastroenterostomy or hemigastrectomy, a temporary gastrostomy is made as a substitute for nasogastric suction.

Since 1954 the authors have used temporary gastrostomy routinely in all vagotomy operations² (73 cases). It has also been employed in 26 cases of subtotal gastrectomy as well as in cholecystectomy, cholecystojejunostomy, cholecystostomy, colon resection and intestinal obstructions. Experience has shown that the tube of choice is a No. 18 or No. 20 Foley bag catheter with the balloon inflated to 10 to 15 cc. of water. The tube is introduced into the stomach, enclosed by a single purse-string suture midway between the greater and lesser curvatures of the stomach in the proximal portion of the lower half. The visceral and parietal peritoneal surfaces are opposed by two contingency sutures. The site for exit of the tube is chosen on the parietal peritoneum which corresponds to the topographic opposite of the purse-string on the anterior wall of the stomach. Inflation of the balloon allows a moderate amount of traction to impinge the parietal and visceral peritoneal surfaces. Traction is maintained in an axial direction by adhesive tape on either the dressing or the skin. The tube is then managed the same as any nasogastric tube, although the difficulties in proper maintenance appear to be considerably less than with the conventional Levin tube. The tube is clamped when oral feedings are begun; and as soon as it is clear that the pyloric tolerance for the diet is adequate, the balloon is deflated and the tube removed. The site of exit is plugged for a few hours with a small strip of Vaseline gauze and a modest pressure dressing. Ordinarily the stab wound is healed within a few hours. Occasionally there is a little drainage from the wound but it is not troublesome.

TABLE 1.—Questions Asked Patients Who Had Had Vagotomy

1. Are you pursuing your usual occupation?
2. What is your present weight?..... Weight before your operation?..... Weight when you left the hospital?.....
3. Have you had any ulcer-type pain since your operation?
4. Can you eat all kinds of food? If not, which must you avoid?
5. Do you take any medicines regularly for your digestion? If so, what and how often?
6. Do you vomit? If so, how often?
7. Have you vomited blood or had tarry bowel movements?
8. How often do your bowels move?
9. Have you had any attacks of diarrhea? If so, how often?
10. Do you regularly have any unpleasant symptoms coming on, during, or right after any meal?
11. Do you regard yourself as well?
12. Are you satisfied with the results of the operation? Would you recommend the operation to others? Would you have this operation again?
13. Do you consider that operation has relieved your ulcer pains?
14. Is your result satisfactory or unsatisfactory?
15. Comments:

Postoperative studies by means of x-ray have not indicated any difficulties in connection with the temporary gastrostomy. It has proved to be an acceptable substitute for nasogastric suction and has given hope of doing away with some of its major complications—such as ulceration of the larynx, stricture of the esophagus and perforation of the intestines.*

CLINICAL RESULTS

The first 16 patients in the present series were operated upon in 1946 at the University of Michigan Hospital. Follow-up data on them is not reported here. The remainder were operated upon at the California, St. Vincent's and Good Samaritan hospitals. Inasmuch as all were private patients, most were seen at regular intervals for personal interview. In addition they were asked to reply to a questionnaire that was modified from one devised by Hoerr and used at the Cleveland Clinic Foundation (see Table 1).

The questionnaire method has been criticized by some observers as an inadequate method of follow-up. Contrary to this belief, however, it is felt that the questionnaire method for evaluating results of operation for duodenal ulcer is superior in some respects to the interview method. By the questionnaire four points can be determined accurately:

*The authors have recently polled the members of the American Laryngological Society and the American Bronchoesophagological Society to determine the experience with complications of nasogastric tubes. Members reported 258 major laryngeal complications, 79 requiring emergency tracheostomy. There were also 22 patients who developed severe stricture of the lower esophagus presenting a long term problem and requiring numerous dilations for relief. There were also several cases of perforation of the esophagus requiring emergency closure. Seven deaths were attributed to the use of nasogastric tubes.

(1) The ability of the patient to gain weight and maintain nutrition; (2) persistence of ulcer pain or the presence of blood in emesis or stool, which may be taken as an indication of recurrent or marginal ulceration; (3) suitable questions may also be proposed to indicate the incidence of "dumping syndrome" and also diarrhea, and (4) the questionnaire is an excellent method for ascertaining whether the patient is satisfied with the operation and would be willing to recommend it to others.

The questionnaire permits the patient to express himself freely whereas a personal interview may not elicit this information because of the patient's unwillingness to dampen the surgeon's enthusiasm. A genial and optimistic personality may induce the patient to forget any small complaints which would be more likely to appear in writing in absentia. Numerous patients have been subjected to upper gastrointestinal x-ray examination. The roentgen examination of the duodenum following pyloroplasty is fraught with difficulties, and the distortion of the duodenum accompanying the healing of an ulcer frequently leaves permanent scarring which is difficult to differentiate from active ulceration. Also it is well known that marginal ulceration often escapes roentgen detection. The evaluation of symptomatology may be a more reliable guide to the presence or absence of recurrent or marginal ulceration. A patient of average intelligence with the ulcer diathesis can certainly indicate whether or not he is suffering from a pain which is similar or related to that which existed before the operation.

Sixty-odd questionnaires were analyzed in detail. Approximately half of the patients had been subjected to a modest subtotal gastrectomy, usually with resection of the ulcer along with vagotomy, and the other half had either gastroenterostomy or pyloroplasty as an adjunct to the vagotomy. The questionnaires were analyzed with respect to ability to maintain or gain weight, the presence of a possible "dumping" syndrome, the incidence of diarrhea, and the number of unsatisfactory results.

Weight Gain. In the group with gastrectomy plus vagotomy, four patients lost weight following the operation. One reported a weight loss of 32 pounds and the others lost 7, 4, and 5 pounds. Two patients neither gained or lost weight and the remainder of the gastrectomy group showed an average gain of 16.2 pounds.

When compared with the vagotomy plus gastroenterostomy and pyloroplasty group, there was little difference. In this group two patients lost 10 pounds and 13 pounds respectively; six neither gained nor lost, and the remainder had an average weight gain of 18.7 pounds.

Marginal or Recurrent Ulceration. For possible incidence of marginal or recurrent ulceration, the questionnaire was scanned carefully with particular attention to the answers to questions 3 and 7, which read as follows:

"Have you had any ulcer type pain since your operation?"

"Have you vomited blood or had tarry bowel movements, and do you consider that operation has relieved your ulcer pains?"

In the entire group of 60 questionnaires there were only three patients who gave answers indicating further investigation. One said that about a year after operation he had had pains which vaguely resembled those of ulcer, but he responded negatively to questions 7 and 13, indicating that he considered that the operation had relieved ulcer pains. Another patient indicated that he had vomited blood on one occasion approximately 18 months after operation but thereafter had been entirely well; and he answered negatively questions 3 and 13. A third patient indicated that he had had some discomfort after eating, but on the other hand stated that he considered that the operation had relieved ulcer pains. It is planned to investigate these three patients further for the presence of recurrent or marginal ulceration.

Diarrhea. Analysis of questions 8 and 9 indicated clearly whether or not a patient had troublesome diarrhea. In the gastrectomy group there were six patients who made comments concerning their bowel habits. In three of these cases the answers were interpreted as unequivocal evidence of diarrhea. Three others had occasional but mild difficulties. In the pyloroplasty and gastroenterostomy group only two patients commented upon this complication. One of the two also had "dumping" and considered the result of the operation unsatisfactory. It is of interest that when last observed, eight years after operation, he had no evidence of recurrence and nutrition was well maintained. It is planned to investigate this patient for the presence of a high-lying gastroenterostomy stoma, which, when associated with pyloric obstruction, can cause troublesome gastric retention. The other patient indicated a very satisfactory result in spite of mild occasional bouts of diarrhea. The authors are impressed with the greater incidence of this complication in the gastrectomy group.

Dumping Syndrome. Question No. 10 in the questionnaire was asked to bring out any symptoms that might be related to postprandial distress. Three patients who had had gastrectomy four or more years before they were questioned indicated that they were bothered with unpleasant symptoms com-

ing on immediately after meals. Two of these patients had gained 20 and 25 pounds after operation and were able to maintain nutrition in spite of these unpleasant symptoms. However, the third patient undoubtedly had the most unsatisfactory result in this group. He was a man 6 feet 3 inches tall and he had lost 32 pounds since gastrectomy and vagotomy were performed. At the time he replied he weighed slightly over 130 pounds and had a great number of difficulties associated with the ingestion of food. A secondary surgical procedure is under consideration for him. In the gastroenterostomy and pyloroplasty group there was a striking absence of this complication—with one possible exception. Only one patient mentioned this complication and he was the one who considered the operation unsatisfactory because of troublesome diarrhea.

Satisfactory or Unsatisfactory Results. The vast majority of patients indicated enthusiasm for the operation, expressed willingness to recommend it to others, and indicated that they would gladly go through the operation again to achieve the same result. In the pyloroplasty and gastroenterostomy group there was only one patient—he had gastroenterostomy—who indicated that the result was unsatisfactory. Most of his difficulties were related to unpleasant symptoms coming on after eating, particularly after the ingestion of sweets and intermittent bouts of diarrhea. Three patients who had gastrectomy and vagotomy indicated that they had an unsatisfactory result. One of them, already mentioned, had lost 32 pounds and had difficulties connected with “dumping.” The other two, also already mentioned, consider the result unsatisfactory because of the unpleasant symptoms coming on after eating. Yet the same two patients maintained nutrition and gained 20 and 25 pounds respectively.

DISCUSSION

At present, in the opinion of the authors, vagotomy combined with pyloroplasty or gastroenterostomy is the most conservative operation for a patient with chronic duodenal ulcer for which surgical treatment is indicated. More than half of the group of patients reported upon herein were observed for periods of five years or longer. There were no proved cases of recurrent or marginal ulceration, and none of the patients died. Inasmuch as it is generally agreed that conservatism is the essence of treatment for duodenal ulcer, and operation is advised for only 10 or 15 per cent of cases, it would seem logical to extend this same conservatism into the operating room and utilize a procedure with a minimum of risk and an excellent chance of solving the problem of ulcer diathesis.

It is clear that hypersecretion of gastric juice is a characteristic of patients with duodenal ulcer and is undoubtedly the chief factor responsible for mucosal ulceration. Accordingly, complications may be expected when definitive operation, whether vagotomy or gastric resection, has failed to return the secretion to normal levels. In this connection adequate subtotal gastrectomy alone will produce achlorhydria in about 50 per cent of patients, whereas gastrectomy combined with vagotomy will bring about achlorhydria in response to a gruel meal in all cases. Almost twice as many patients will show achlorhydria to histamine following subtotal gastrectomy and vagotomy as following gastrectomy alone.

Marginal ulcers do not appear in man after gastroenterostomy performed for conditions other than ulcer but only after operations upon patients with the ulcer diathesis which is manifest in an excessive nocturnal hypersecretion. The fact, therefore, that one patient will develop a marginal ulcer at a gastroenterostomy site whereas another will not, indicates that there is a fundamental difference in the physiologic response to digestion. Where is this difference? Is it due to some abnormality in the stomach itself? Extirpation of large amounts of normal gastric mucous membrane not infrequently fails to alter the ulcer diathesis either clinically or as measured by laboratory tests. There are numerous reports in the literature indicating that the incidence of marginal ulceration following various types of subtotal gastrectomy may approach 10 per cent. A recent report⁴ of 35 patients having *extensive* partial gastrectomy with gastroduodenostomy for duodenal ulcer revealed ten recurrent ulcers (28.6 per cent), and overall evaluation of the duodenal ulcer group showed unsatisfactory results in 60 per cent of those having gastroduodenostomy and in 30 per cent of those having gastrojejunostomy. Many surgeons who are unwilling to use vagotomy in the treatment of duodenal ulcer have indicated a willingness to use it when confronted with a marginal ulcer following subtotal gastrectomy. It seems to the authors that this reasoning is in reverse. Why not utilize a conservative operation preserving the mucous membrane of the gastrointestinal tract as the preliminary operation, then in the event that a second operation is indicated, give consideration to subtotal gastrectomy. Perhaps only one patient in 20 or 30 will eventually need a second procedure such as this.

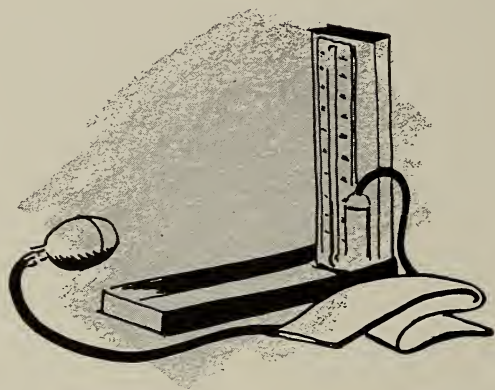
In this connection it is a mistake in the teaching of residents to imply that all duodenal ulcers may be dealt with by using operations of only one type. It is not sound to say that all patients, for example, should have a Billroth I or a Billroth II operation, or that all patients should be treated by vagotomy and pyloroplasty. The problem is not as simple as

that. Each patient presents a problem in gastric physiology and to solve it requires a background of experience and judgment. If a surgeon approaches a patient with an irreversible preconceived idea of what he must accomplish, he may well be making a serious error. Ulcers may be just as inoperable as cancer, and a surgeon who has been taught to carry a certain objective to the bitter end might do harm because of a complication arising from poor closure of a duodenal stump.

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Delinquency

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BEHAVIOR of a kind labeled delinquency occurs in childhood, in adolescence, and in adult life. In childhood it is referred to as a behavior disorder, in adolescence as juvenile delinquency; in adult life it is commonly called psychopathic behavior. It would appear that many of the same causative factors are involved in the chronic delinquent states in all three age groups. Some general statements can be made regarding delinquency.

1. Not all behavior problems develop into juvenile delinquency, nor do all juvenile delinquents later become adult criminals.

2. Conflicts are present which are dealt with by acting out in an antisocial way rather than being dealt with by various neurotic defense mechanisms.

3. Delinquency occurs in adults and children from so-called "good" homes as well as in persons who live in (or come from) homes that are considered "poor" homes.

4. There appears to be a defect in conscience.

With these general statements in mind, a discussion first of some of the characteristics of behavior disorders in children seems in order as well as some exploration as to what goes into personality development. Aggressive behavior disorders in children are characterized by defiance and egocentricity. Desires are carried out with an impulsiveness to satisfy the wish of the moment despite possible consequences. In such cases parents describe considerable difficulty in controlling the child's actions and behavior. He tends to be the leader in exploiting, teasing or molesting other children whom he feels he can dominate; he also tends to be the leader in disrupting the classroom routine, and in general behaves much of the time contrary to what is expected of him. He often becomes destructive of the property of others, willfully and maliciously destroying that which belongs to other children or adults regardless of value. Often the destruction and rebellion are direct and open, especially when the behavior is directed toward another child or that child's belongings. It may also be very direct and open when adults or their property are involved, although with adults it may take on more covert and less direct forms of carrying out the rebellion. As the aggres-

• Not all behavior problems develop into juvenile delinquency nor do all juvenile delinquents become adult criminals. Environment is not in itself the only determining factor in the development of delinquency; rather, environment may offer the opportunity for acting out conflicts in an antisocial way. Conflicts are dealt with by antisocial behavior patterns rather than through various neurotic defense mechanisms. There appears to be a defect in conscience.

Parental roles are extremely important in helping the growing child develop those positive aspects of his personality which lead to adult maturity and adult happiness. Included in parental factors are the relationships of both parents to the child, not just in what is conscious and deliberate in the relationship, but in what also can occur unconsciously or without awareness in the relationship.

siveness expands, it becomes a problem not just to the parent or playmates, but to teachers, to school authorities and finally to law enforcement officers. As age increases, burglary, sexual delinquency and other crimes may occur.

When a child of this kind, or an adolescent or adult, is interviewed by a psychiatrist, it is frequently found that there has been an absence of consistent adequate firmness of the right kind, and an absence of the type of family experiences which create a sense of belonging to a particular family group with definite rights. He may try to blame others for his wrongdoings. Defiance is frequent. There may be a history of the parents' rigidly controlling all activity and expecting a great deal from the child, or a history of very little control or of little expected from the child. In histories of either type, what appears to be present as a common factor is an absence of respect for the child's wishes and feelings, an absence of taking these rights and feelings into consideration while firmly setting the controls and limits which are necessary for social adjustment and which the child must eventually learn to set for himself. Real warm affection and understanding with a willingness to help and to encourage and to learn for his own benefit, not the parents' benefit, seem to be absent.

Inconsistency in dealing with him as a child is frequently present in the history, with wide fluctuations in reactions to behavior occurring. Not being able to rely on adults for gratification, the child relies on opportunities and his own skills for obtain-

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ing self gratification. When the only real attention he gets is in the form of punishment for disobedience in regard to the wishes of others; he may, as a child, deliberately misbehave to gain some recognition from the parents, even if it is undesirable recognition. From this lack of recognition for good behavior and only recognition for bad behavior, any feelings of injustice he may have are reinforced. In other words, events can be such that it becomes difficult for first the child, then the adolescent, then the adult to fit himself into a way of life that brings him a feeling of security and happiness, and a way of life that is in conformity with what society expects and demands of him.

It has already been mentioned that there appears to be a defect in conscience. Parental roles in developing conscience are extremely important, for the main development of the conscience is in the first six years, and during these years the main contact of the child is with parents or parent surrogates. Children need consistency, firmness, stability and honesty from a parent as well as other factors. He is full of impulses, urges and emotions that need to be channeled into areas that are beneficial to him and society. At first he cannot set limits for himself; the parent has to set them for him until he can do so for himself and for his own benefit. He has to learn what is acceptable and unacceptable and to learn that he can have all kinds of feelings, but that what he does in response to those feelings is something that can be controlled and he be happier for controlling them. He has to learn that he has certain rights and privileges and that others also have rights and privileges. He has to learn to respect the rights of others just as others need to respect his rights. He has to learn what real love and affection and understanding are. These are just some of the things he needs to learn in order to grow into a well-adjusted adult that society can be comfortable with.

Questions arise as to how he develops these positive aspects in his personality and how he develops a conscience. These are qualities not present in a child with severe behavior disorder, in a juvenile delinquent or in an adult delinquent. In the earliest preschool years of the child, the biggest responsibility for this development falls to the parents, primarily by example in their dealings both with the child and with others.

It is important to consider what parents may or may not do in their relationship with a child—both consciously and, especially important, unconsciously. Johnson and Szurek¹ expressed belief that a child will not overlook any cheating of him or of anyone else, and that deception encourages deception. They gave examples: A mother's giving a child money with instructions not to tell the father, or a parent's keeping too much change from the grocer or encour-

aging a child to understate his age to enter a movie at half price—yet the parents expecting the child to be honest. Parents may likewise expect a child to respect the laws of the community but then boast of their own ability to avoid punishment for a minor infringement. Such an example is the father who boasts of not getting caught going through a red light or stop sign when his son says, "Daddy, you went through a red light," and Daddy replies: "That's all right, there aren't any cops around."

In thinking of what parents may or may not do in their relationship with a child, many questions can be kept in mind. How much is discipline carried out with the thought that it is necessary as part of encouraging the child to learn there are limits he must learn to set for himself if he is to get along in society? How much is discipline carried out because it relieves the anger of the parent or to express the parent's resentment because the child's behavior caused the parent difficulty? How much is the child looked on as an individual in his own right with real feeling, emotion, urges and instincts of his own that need to be channeled into productive, acceptable and satisfying areas? How much do the parents recognize that the firmness and consistency they do or do not show will serve as a model for the child? How consistent is the parent? How realistically firm and stable is he? How understanding is he? How much is he really interested in the child for the child's benefit rather than what shame or praise his child's behavior can bring to him as the parent? How much does he transmit his feelings of love, affection and concern to the child? Does supplying him with a welter of toys and material objects replace talking together: and do they replace the closeness that can come from sharing and doing and understanding together? How often does the parent have unconscious needs, impulses, and urges—that he is unaware of himself—that inhibit his ability to handle some type of behavior of the child because he gets unconscious satisfaction through the child's living out his own poorly inhibited antisocial impulses? These examples and questions are the sort of things that almost everyone may have done, and when they occasionally occur, it does not mean the child is going to be a behavior problem, or a delinquent or a criminal. Whether a gross behavior disorder does develop or not depends on the intensity, the duration and the time in the child's life the causative factors occur.

External factors of a social nature can play a role in causation, and social factors that encourage delinquency need to be corrected. However, added to this is the fact that not every child in unfavorable surroundings develops into a delinquent, nor does every child from a high income home avoid being a delinquent. In other words, the environment that

is bad can provide the opportunity or outlet for antisocial behavior where the resistance is already weak, and if the environment were better and the weakness strengthened in other ways, the behavior would not occur. The weakness referred to is the failure of the development of an adequate conscience in the child, of a failure to learn what is really acceptable or unacceptable, of a failure to acquire the strength and the capacity to resist the temptations as well as help him learn other channels into which his urges can go to be productive to himself and society.

This again leads back to the parents. The child in the slums, for example, is exposed to many things we all are aware of. But is he also subject to a home environment that encourages him to lead a life which will bring him happiness and security? Is his resentment for his lot in society a reflection of the parents having the same feeling of resentment and hostility toward society? It can be seen that probably how a parent handles his own feelings in reaction to the stresses he meets will teach a child by example how to handle his feelings in reaction to stress. If the parent repeatedly deals with aggression on the part of the child toward him by hitting him back in anger, then this is likely to be the way in which the child will deal with others who anger him—if the parent hits when angry, then why should not he, he feels, hit and kick the parent when he is angry at the parent.

The child may develop more and more antisocial problems out of early behavior problems until he is an adult criminal. The parent may never deal with the "small" things and then be angry and bewildered when big things later happen. Many case histories reveal a history of parental sanctions in early life of antisocial offenses and overlooking of small offenses in the hope the child will change as he gets older and "grow out of it."

In other situations one may find a history of model behavior as a child and adolescent. The child never did anything wrong. It frequently happens on exploration of the history that what is uncovered is very rigid and strict discipline, with little or no consideration for the feelings of the child. There may have been considerable punishment but no praise. The child behaved and conformed not because he learned it was the best way to behave for his own lifelong benefit but because of fear of severe retaliation from the parents for any kind of error with no understanding or effort to understand on the part of the parents. When this child finally leaves the home, he may then give in to antisocial impulses and carry them out since he had learned to control them before, not for his own personal satisfactions, but because of fear of parental reaction and lack of understanding by the parents.

In general, no child will be perfect, or will never do anything wrong, anymore than any parent will be perfect or do no wrong. However, how the behavior problem is dealt with, how much real understanding the child has, how stable, integrated and self aware the parent is can determine to a great extent how the behavior problem is going to go. Developing emotional maturity is essential. If it is developed, the adult criminal will not emerge. From this may come the answers as to why some delinquents do not become criminals and why some children with behavior problems do not become delinquents. The more love, affection, genuine understanding and other positive factors outweigh the negative influences, the greater the chance the child has to find solutions to his conflicts and achieve an emotional maturity so antisocial acting out is no longer necessary. The greater the negative factors mentioned are present, the harder it will be to help a child find proper solutions to his conflicts so that his aggressive behavior disorder does not lead to juvenile delinquency or to adult criminal life.

How to change this pattern requires a concentrated effort by all in contact with children. Parents, of course, play a big role, especially in the earliest years. In later years others such as schools, authorities, social agencies and clinics staffed with competent trained personnel in addition to parents can try to supply what is needed to help the child or juvenile find other solutions to his conflict and help him learn to find gratification in leading a socially acceptable life—not just because society does not approve, but because of the happiness, security and pleasure he can get from it.

Again, how successful these attempts will be will depend on how much damage has or has not been done in the earliest years of conscience formation. The more conscience he has been able to develop and the earlier the child is given help with his problem, the greater the chance that he can develop the emotional maturity that is necessary to be a socially accepted citizen.

Many areas which may be involved in the etiology of behavior problems are not mentioned here—not because they are not important, but because of a wish to stress the importance of the need to help a child grow and develop the necessary emotional maturity for a happy adult life. In the area discussed much emphasis has been put on parental roles in this task, with the need to think not just of external influencing factors, but of what the growing child feels, needs, and desires in the way of limits, firmness, understanding, and consideration.

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Postthrombophlebitic Syndrome

Rehabilitation of Patients

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THE MAGNITUDE of the problem of chronic thrombophlebitis in industry has not been fully recognized and too little attention is given to it. The number of cases, the loss of efficiency and the effect upon the person whose efficiency is impaired are great.

The disability is primarily the result of a persistent or recurrent edema of the affected lower extremity following within a few days, or even years, of acute thrombophlebitis of the deep veins. The syndrome is complex and is known by many names. The commonest are postthrombophlebitic syndrome, postthrombotic syndrome, milk-leg, phlegmasia alba dolens, leg of venous insufficiency, postphlebitic leg and phlebitic lymphedema. It is manifested chiefly by swelling of the affected lower extremity. The degree of swelling depends upon the duration of dependency and the extent of the venous obstruction. Although there is often an element of lymphedema, it is slight.

Subjective symptoms are mainly burning, itching, aching, stiffness, heaviness and bursting or throbbing pains that become progressively worse throughout the day as dependency persists. Nocturnal cramping and restlessness of the involved extremities are common, the degree depending to a great extent on the amount of activity of the day. Complications of ulceration, dermatitis, eczema, skin infection, pigmentation, scarring and varicose veins are frequent. Although anticoagulant and other specific therapy early in the acute phase have been reported to lower the incidence and severity of the chronic symptoms, the author has not found such therapy very effective. Furthermore, the acute phase is frequently not diagnosed and specific therapy therefore not given.

INCIDENCE

The number of persons with painful swelling of the lower extremities is high. It has been estimated that between 7 per cent and 9 per cent of the adult population of the United States has sufficient swelling of one or both lower extremities to require use of elastic stockings or bandages. Chronic thrombophlebitis has been found to be the primary cause of swelling in most such persons. By extension, at

• A common cause of disability in industrial workers is the postthrombophlebitic syndrome. Swelling of one or both lower extremities may require frequent rest periods during the day for relief. The disabling symptoms are aching, burning, heaviness, and bursting or throbbing pains in the legs. The nights are often disturbed by restlessness of the legs in which it is difficult to find a comfortable position to sleep. It follows from a few days to even years an inflammation of the veins of the legs.

Treatment is directed at reducing the swelling of the legs. This often necessitates a change in the patient's routine of daily living. Frequent rest periods are often required with the legs in the horizontal position. Elastic bandages or stockings must be worn, and drugs must be taken to improve blood flow. The adjustment is necessary not only at work, but also at home.

If the patient cannot continue at his present job, efforts should be made to place him in a new job where the necessary adjustments can be made. This is possible primarily in industries manufacturing small items such as instruments, toys and appliances.

the present population figure of 160,000,000 probably more than 10,000,000 persons in this country are so affected. This number should not be astonishing when it is recalled that between one and a half to two per cent of all surgical cases of the abdomen and pelvis and lower extremities, and 1 per cent of all pregnancies, are followed by acute thrombophlebitis. The disease occurs in a large proportion of patients following injury to the legs. It is a disease of all nations. Within a radius of 50 miles of the city of Manchester, England, alone, there are over 50,000 cases of the thrombophlebitic state requiring constant medical care for the complications.¹ Swedish statistics reveal that the disability caused by thrombophlebitis⁴ results in a greater annual loss than disability due to motor car accidents.

PATHOLOGY

Chiefly as a result of injury or infection, thrombophlebitis results in the occlusion of segments of deep veins. Even if recanalization follows the occlusion, the veins become incompetent from damaged valves and rigid walls. Localized obstructions occur. The backflow through the incompetent valves and the

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hindrance to the return flow by obstruction creates edema. The distal veins become dilated and collateral vein channels enlarge, resulting in varicosities. Nutrition and tissue fluid and blood changes often lead to pigmentation, dermatitis and ulceration. Dependency aggravates the swelling through gravitational stasis.

TREATMENT

As the symptoms are more or less in direct ratio to the degree of edema, treatment is aimed at reducing it. That there may be broad variations in the severity of symptoms is well known.⁵ Pronounced disability has been known to occur with minimal edema and no disability complained of in the presence of severe edema. For the vast majority of cases, control of edema is all that is necessary to permit the patient to continue to work a full schedule without discomfort or loss of efficiency.

The author has treated more than 200 patients with industrially incurred or aggravated chronic thrombophlebitis with the following measures, which have been found to give the best results in practically all cases. They are simple and easy to carry out, although they require that the patient cooperate and be willing to make an adjustment or change in his routine. They must be carried out for many months to many years. In the majority of cases these measures alone are sufficient to return the patient to work.

1. The patient should sleep with the foot of the bed elevated 4 to 6 inches. This is best accomplished by placing books or blocks on the floor and then placing the foot end of the bed on them. When this is impractical, placing a pillow or similar object under the foot of the mattress is satisfactory. The edema which has accumulated through the day is thus reduced or completely abated during the night by the force of gravity.

2. In a majority of cases compression therapy is required. The first thing on rising, before placing the feet over the edge of the bed, the patient should apply elastic stockings or bandages. At the onset of treatment, bandages are preferred. They must be applied snugly from just behind the toes to just below the knees, with adequate pressure over the ankle areas. Later elastic stockings might be worn. The purpose of stockings is to prevent swelling and not to force out swelling already present. In some cases of mild edema, compression therapy might not be necessary.

3. The leg should be kept in the horizontal position whenever possible. It is not necessary to elevate the extremity. Keeping it outstretched is often adequate. This is frequently difficult while at work. Workers who are forced to keep their legs in the dependent position for long periods require

more attention. Chronic leg dangling must be discouraged. If possible the legs should be kept stretched out for a few minutes every few hours.

4. Utilization of "the calf muscle pump." Through foot-ankle exercises in which the foot is rotated on the ankle, calf muscle contractions are brought about. This exercise should be carried out as frequently as possible. The calf muscle acts as an auxiliary vascular pump. This action is of great physiological importance in aiding venous return.

5. Deep breathing exercises are also of considerable value in returning the venous blood back to the heart. This is owing to the suction action of the negative pressure in the chest on inspiration.

Drug Therapy

Some pharmacological agents are of value in the relief of objective and subjective symptoms.

1. Vasodilator drugs are of considerable benefit, especially if the affected extremity is cold and other evidence of vasospasm is present. The drug which has been found by this author to be the most effective in combating vasospasm is Hydergine®.^{6,7} Hydergine is a mixture of the hydrogenated ergot alkaloids, with a vasodilator sympatholytic activity. It is administered sublingually, 1 tablet four times daily. It must be given for long periods.

2. Drugs for nocturnal distress. Many patients complain of cramping, restless, irritable legs, especially at night. These symptoms may be severe and disturb sleep. There are many preparations that prevent these distressing sensations. Benadryl (diphenhydramine) 50 mg. nightly, is very effective. Other preparations for this purpose are quinine, 0.3 gm.; tolserol, 1 gm., or Orthoxine® (methoxyphenamine), 100 mg. Combinations of two or more of these drugs might be necessary if there is not adequate response to single preparations. It must be understood that they are used only to prevent and not to stop an attack once it has started.

3. Diuretics might be necessary. Ammonium chloride is simple to administer and fairly effective. The mercurials orally or parenterally might be indicated if edema is difficult to control. The author's experience with the newer orally administered diuretics has been disappointing.

4. Occasionally a reduced intake of sodium aids in controlling edema.

Recently trypsin^{2,3} has been recommended in the acute and chronic phases. The author has had no success with it.

The complete carrying out of all these measures will not be possible—or necessary—in every case. It is recognized that the patient must work. Indeed, it is important that he do so. Inactivity is detrimental

to recovery. Due to the individual variation in symptomatology, considerable judgment must be used. Patients should elevate their legs at frequent intervals, which they can do in the present industry routine of frequent short rest periods during the day. Facilities should be available at work so that the affected leg may be kept in the horizontal position. These simple aids in resting an affected extremity may be the factor between continuing to work and disability. In addition, the immediate working area must be safe. It must be free of traumatizing objects such as protruding fixtures or stacks of materials, lest new trauma cause recurrence.

Many patients ask about sports they may indulge in. Swimming or bicycling are recommended, for they help to reduce the edema.

COMPLICATIONS

Many of the complications that might occur are preventable or can be minimized by controlling edema. The cause of their occurrence and recurrence is the disturbed tissue nutrition from the swelling. Edematous tissues are more susceptible to injury and infection. The most frequent complications are varicosities, dermatitis, local infection and ulceration. The therapy required is more diligent compression and rest in addition to specific measures. For ulcerations the following topical preparations have been used or recommended: Red blood cell paste, chlorophyll ointments, antibiotic ointments and powders, topical dyes such as gentian violet and brilliant green, cod liver oil preparations and a host of others. Antibiotics are often given, parenterally and orally. Surgical excision of the damaged tissue is frequently necessary. Varicosities are best treated surgically when they are a factor in ulceration and dermatitis. Sclerosing therapy is rarely indicated. Edema often persists despite surgical procedures such as the removal or ligation of varicosities, sympathectomies and excision of scarred and ulcerated tissues. Physiotherapy such as whirlpool and ionization to the affected extremity with histamine or Priscoline® (tolazoline hydrochloride) are effective methods of therapy, especially in ulcerations.

AGGRAVATING FACTORS

In the successful rehabilitation, every disturbing or aggravating factor must be understood and combated if possible.

1. Heat is important as a disturbing factor. Swelling of the ankles in hot weather is frequently observed in even normal persons. In persons in whom edema is already present, the aggravation might be disabling. During hot spells more care is required.

2. An increased intake of sodium might increase or precipitate edema. An exacerbation of edema is occasionally observed to follow an increased intake of sodium bicarbonate for gastric distress.

3. Recently edema of the extremities has occurred following prolonged administration of rauwolfia for hypertension. Likewise, the administration of cortisone and related compounds is occasionally followed by swelling.

4. Occasionally in the normal routine of daily living edema of the extremities appears. Sitting with the legs in the dependent position while playing cards, watching television, or at the theater often leads to edema. When aggravated in the evening, the resultant edema might persist on into the morning. Long car rides with the legs down are also disturbing factors. This is especially important where the worker has to ride a considerable distance to work. Although on rising in the morning the affected extremity may be edema-free, often there is considerable edema by the time the worker arrives at his job. The patient should be encouraged to move nearer to his job or to be a passenger in the car and to ride in the back seat with legs outstretched. The patient may unwittingly aggravate or precipitate edema in doing jobs about his home, especially in these days of "do it yourself." (One young man who had had thrombophlebitis two years previously, with complete recovery, found he could not return to work after a vacation due to pronounced swelling of the previously affected leg. It was found that he had painted his house and had been on his feet for many hours daily without rest.) Home jobs are frequently found to be aggravating factors and there is a tendency not to give them enough attention as disabling factors. Industry is often wrongly blamed for these exacerbations.

REHABILITATION INTO A NEW JOB

In some cases, disabling symptoms cannot be effectively controlled, and a new job is necessary. The change is usually difficult to carry out. There is often considerable resistance and antagonism by the patient. He might lose his seniority or he might be forced to take a lower paying job. In addition, employers are not too eager to hire persons past 45 years of age, especially when they have a known defect. Every effort must be made to obtain the patient's cooperation. He must be assured that every available means is being used to help him. Jobs in which prolonged dependency of the leg is necessary should be avoided—jobs that require long sitting with the knees flexed or standing—secretarial and other office work, jobs as truck drivers, motormen, policemen, bartenders, barbers, elevator operators, laborers in the building trades as paperhangers, plas-

terers, construction workers, brakemen, machine operators or pressers, among many others. Occupations that are acceptable are those which require little standing and give opportunity of sitting with the legs outstretched or those that permit the patient to move about freely. It is not necessary to keep the legs outstretched all day. If they can be outstretched for varying periods during the day, disability might be nil. The industries where these requirements are best met are those manufacturing small objects such as instruments, jewelry, toys, gloves, radios and the like. Patients can often work with their feet on a box or a chair without reduction in efficiency. Some might do well where considerable walking is necessary, where rest periods may be indulged in and where there is considerable movement. Jobs of this order are those of postmen, small parcel delivery men and messengers. Jobs where the worker is more or less on his own are those of traveling salesmen, salesmen for large items as new cars, gardeners in large establishments and owners of small stores. In many cases reeducation and rehabilitation are impossible due to lack of training and age. Substitutions in a related job may be the answer—for example, the truck driver may become a taxi driver. Taxi drivers have considerable freedom in periods between passengers. They can sit with their legs outstretched in the taxi while waiting or can stretch their legs at a cab station.

CONCLUSION

The majority of disabling symptoms in patients with chronic thrombophlebitis of the postthrombophlebitic syndrome are due to gravitational and stasis edema of the affected lower extremity. Reduction of the edema is necessary for the continued

working ability of the patient without loss of efficiency and occurrence of complications. An adjustment is often required in the way of life of the patient not only at work but also at home. Once this has been accomplished many can continue to work. Those who cannot completely adjust or control the edema or subjective symptoms must be given other jobs. Industry must cooperate by making it easier for him to maintain his affected extremity in the horizontal position or to assign him to another job where more movement is possible. Additional trauma must be avoided. It must be remembered that the condition is often chronic and that exacerbation from further injury or prolonged dependency might occur. As long as the patient and industry both understand the problem and attempt to help in its solution, a return by the worker to his previous job and complete rehabilitation can frequently be satisfactorily carried out.

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Mandibular and Maxillary Anesthesia

Uses of the Conduction Technique

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THE ARMAMENTARIUM of a surgeon who operates on the head and neck should include the ability to obtain successful local anesthesia of the oral and facial areas. The method of choice should be conduction anesthesia when possible. By conduction anesthesia is meant the specific interceptive blocking of a given nerve. This term is in contradistinction to the field block obtained by general diffusion of the anesthetic agent through or about the proposed operative site. The field block is a satisfactory choice where specific nerve block cannot be successfully applied or where the conductive block must be augmented. The conduction technique is of perhaps greatest value when infection or a malignant lesion precludes the insertion of a needle at a given site.

In this discussion the advantages of various local anesthetic agents will not be weighed, but the author personally prefers to use lidocaine or procaine (1 or 2 per cent as indicated) routinely, in that order of preference. If there is no contraindication to the use of epinephrine, a 1:1000 solution is added to the anesthetic blocking agent, up to the amount of 0.1 cc. Epinephrine is of value in preventing the rapid absorption of the anesthetic agent which, in turn, helps to avoid a high blood level and a toxic reaction; it also prolongs the operative analgesia time.

The nerve blocks herein described are those related to the second and third divisions of the trigeminal (fifth cranial) nerve. Because of the numerous exits of the various divisions, the branches may be blocked singly or in various combinations. It is felt that the following techniques are basic and sufficient for ordinary procedures of the maxillofacial area. They do not include, by any means, all the numerous blocks which have been mapped out to gain specific anesthesia of this area.

ANESTHETIC METHODS

Before the insertion of the needle, the field is prepared with an antiseptic agent in a suitable manner and, if necessary, draped with sterile towels. The appropriate needle is fitted to a Luer-lok syringe of the

• A series of techniques for obtaining specific nerve-block anesthesia of the oral cavity and jaws is examined in relationship to the anatomical site to be anesthetized, whether for operation or diagnosis.

This method of anesthesia is considered superior to the field-block approach—that is, the general diffusion of anesthetic agent through or about the proposed operative site.

The final goal of a surgeon using local anesthesia is the gaining of specific nerve-block anesthesia as a prelude to operation.

size desired. A spinal needle with trochar may be utilized for the deeper blocks. During the process of insertion, suction is applied with the syringe so that no solution enters a vessel, and aspiration is again carried out when the needle is considered to be at the final, correct location to make sure that the tip is not in a blood vessel.

Mandibular Block

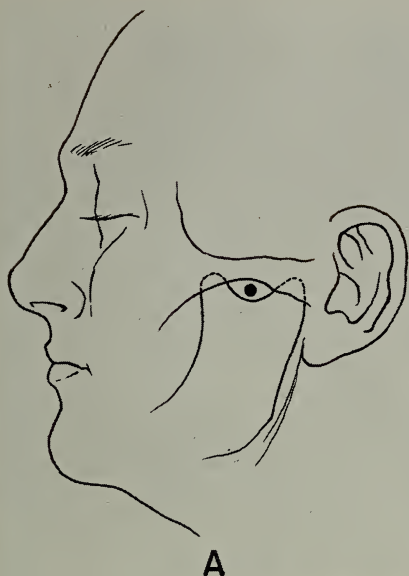
Mandibular block may be done for surgical, diagnostic or therapeutic purposes. It is used for operations or manipulations of the mandible, including the teeth, the gingiva and the lower lip, as well as the anterior two-thirds of the tongue and the region of the joint capsule. It also produces anesthesia of the motor branch of the trigeminal nerve which supplies the muscles of mastication. When it is successfully performed, complete anesthesia of the entire division of the trigeminal nerve is effected.

Landmarks. The sigmoid or mandibular notch, together with the lower border of the zygomatic arch, may be outlined by pen on the face of the patient (Figure 1, A). The location is made easy through palpating the area by opening and closing the mouth. The needle is then introduced at the central point.

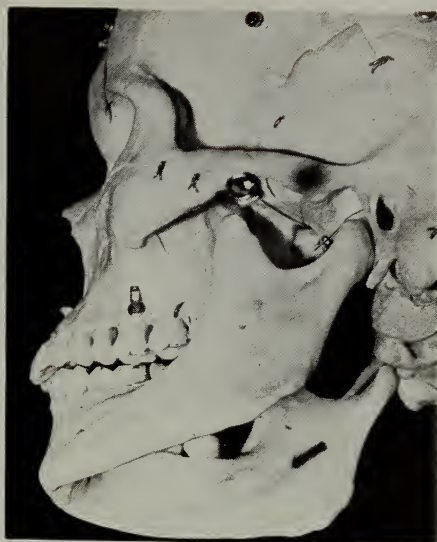
Technique. A No. 25 hypodermic needle is inserted into the skin, and a wheal is raised. A 6 cm., No. 21 or 22 gauge needle is then introduced into the wheal at right angles to the cheek surface directly through the mandibular notch and advanced approximately 3 cm. A small amount of anesthetic solution may be deposited from time to time to prevent extreme pain. The point of the needle is then elevated slightly and advanced another 2 cm. By

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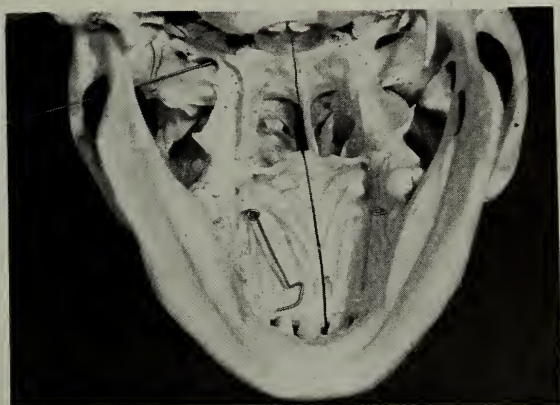
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A



B



C

Figure 1, A, B, and C.—Mandibular nerve block.

then the needle has usually come against the smooth undersurface of the greater wing of the sphenoid bone, just external to the foramen ovale (Figure 1, B and C). In general, the needle should not be introduced more than 5 cm. At this point, 3 cc. to 5 cc. of lidocaine is released. The needle is withdrawn, and the onset of analgesia is usually noted in 5 to 15 minutes. The period of anesthesia may range from one to two hours or more, depending upon the accuracy of the block and the use of a vasoconstrictor.

The following procedures are subdivision blocks of the mandibular nerve and may be performed when the extent of anesthesia is to be limited to an appropriate portion.

Pterygomaxillary Block

The inferior alveolar nerve is distributed to the mandible, lower teeth, gingiva, lower portions of the face and lower lip. After separating from the common mandibular trunk, it descends on the medial as-

pect of the ascending ramus of the mandible, where it enters the inferior dental foramen approximately 1 cm. above the surface of the lower molars and courses through the canal of the mandible to supply the teeth. At the mental foramen a branch emerges as the mental nerve.

Intraoral technique. With the forefinger in the retromolar trigone, the needle is advanced toward the finger to a point of insertion medialward and 1 cm. above the occlusal surface of the last molar tooth. The initial position of the syringe is such that the needle will pass through the trigone as the shaft lies at a point between the lateral incisor and first bicuspid of the opposite side. The needle is then advanced until the bone is encountered. The syringe and needle are shifted to the side of anesthesia and advanced parallel to the molar along the inner margin of the ramus. Advancement is carried to the region of the lingula, and the shaft is again rotated to the middle or slightly to the opposite side (Figure 2, A). Anesthesia will be effectively gained by release of 2 to 4 cc. of 2 per cent lidocaine. The lingual nerve is usually anesthetized at the same time as the inferior alveolar nerve, since the former is anterior and slightly medial to the latter in the region of the ascending ramus where the needle is inserted. The lingual nerve traverses inward, forward and downward, coursing beneath the mucous membrane of the floor of the mouth to supply the anterior two-thirds of the tongue with sensation. In performing the pterygomaxillary nerve block, one usually anesthetizes the buccinator nerve, which is the sensory division that courses lateralward across the ramus of the mandible to the region of the mucous membrane of the side of the cheek in its innermost portion. This nerve is not motor to the buccinator muscle, but is merely sensory to the area of the cheek.

Extraoral technique. When it is desired to obtain anesthesia of the inferior alveolar nerve without entering the oral cavity, a 6 to 8 cm. needle may be introduced externally at the angle of the jaw on the medial surface of the ramus of the mandible after a skin wheal has been raised. In general, the long needle is inserted close to and almost against the inner surface of the ramus of the mandible so that its path will pursue a position midway between the anterior and posterior border of the ramus and traverse one-half to two-thirds of the distance between the angle and the sigmoid notch (Figure 2, B). As in the intraoral injection, 2 to 4 cc. of 2 per cent lidocaine solution is usually sufficient to produce anesthesia. Indications for this procedure are exactly the same as for intraoral block except that the mouth is not entered. This method, however, does not so easily gain anesthesia of the lingual nerve as does the oral technique.

Lingual Nerve Block

The intraoral method for blocking the lingual nerve was described in the section on pterygomaxillary nerve block, and anesthesia of this nerve was also mentioned in connection with blocking of the common mandibular trunk at the foramen ovale.

Extraoral technique. If it is desirable to block the lingual nerve alone, the needle is inserted beneath the mandible upward, slightly backward, and inward to the lateral portion of the border of the tongue. After a wheal is raised, the needle is inserted just anterior and medial to the area where the facial nerve and vein cross the mandible. Injection of 5 cc. of 2 per cent lidocaine solution is usually adequate, but since with this technique it is almost impossible to determine the exact position of the needle point in the lateral wall of the tongue, the needle is inserted deeper as each cubic centimeter of solution is injected. Anesthesia is usually produced in 5 to 10 minutes. If the technique is successful, numbness of the side and floor of the mouth, side of the tongue, lower gums, submaxillary ganglion, and interior two-thirds of the tongue on the appropriate side is effected.

Mental Nerve Block

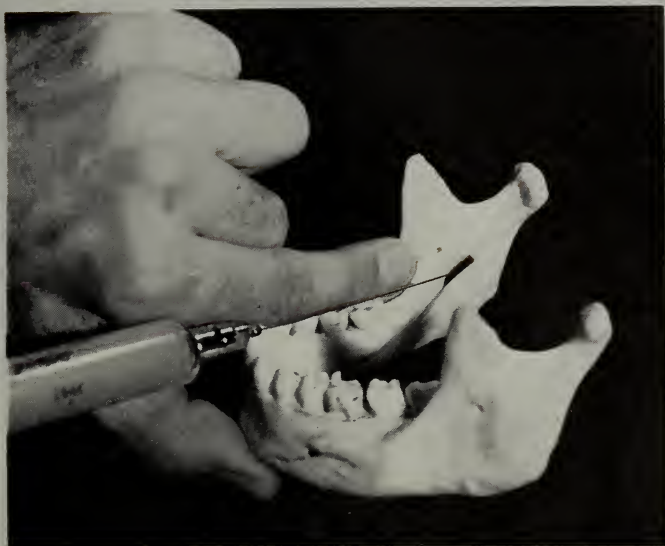
Mental nerve block is suitable for operations on the lower lip, lower incisors and cuspids, and for work on the mandible between the two mental foramina when both are anesthetized.

The mental foramen is usually located by palpation beneath and between the bicuspid teeth. The opening inclines somewhat posteriorly, and therefore, when the oral route of approach is used, the foramen cannot be easily entered. A 1-inch, No. 25 gauge needle is suitable for either intraoral or extraoral blocking and, in the oral procedures, can be advanced through the lower reflection of the mucous membrane between the premolar teeth to the palpable area of the foramen.

For complete anesthesia 2 cc. of lidocaine solution is usually adequate. For the external approach the needle can be directed into the foramen with ease from a posterior-superior position after a skin wheal has been raised. Only when the foramen is actually entered can adequate anesthesia of the incisors be assured.

Maxillary Nerve Block

Maxillary nerve block is used when the upper jaw, including the teeth, gingiva and maxillary bone, the upper lip, a small portion of the inner angle of the nose and lower eyelid, the antrum, palate and a portion of the tonsils are to be anesthetized. The maxillary branch of the trigeminal nerve is a sensory one. It leaves the skull through the foramen rotundum,



A



B

Figure 2.—Inferior alveolar nerve block. A—Intraoral position. B—Extraoral position.

passes through the pterygomaxillary or pterygopalatine fissure, and enters the inferior orbital fissure, traversing it anteriorly.

Landmarks. The anterior border of the ramus of the mandible and the coronoid process are palpated and then outlined on the cheek of the patient by hav-

ing him gently open and close his mouth so that the anterior border of the ramus may be located easily. Next, the root of the zygomatic process is palpated, and the point at which it intersects the anterior border of the ramus is the zygomatic angle (Figure 3, A). At this angle the needle is introduced.

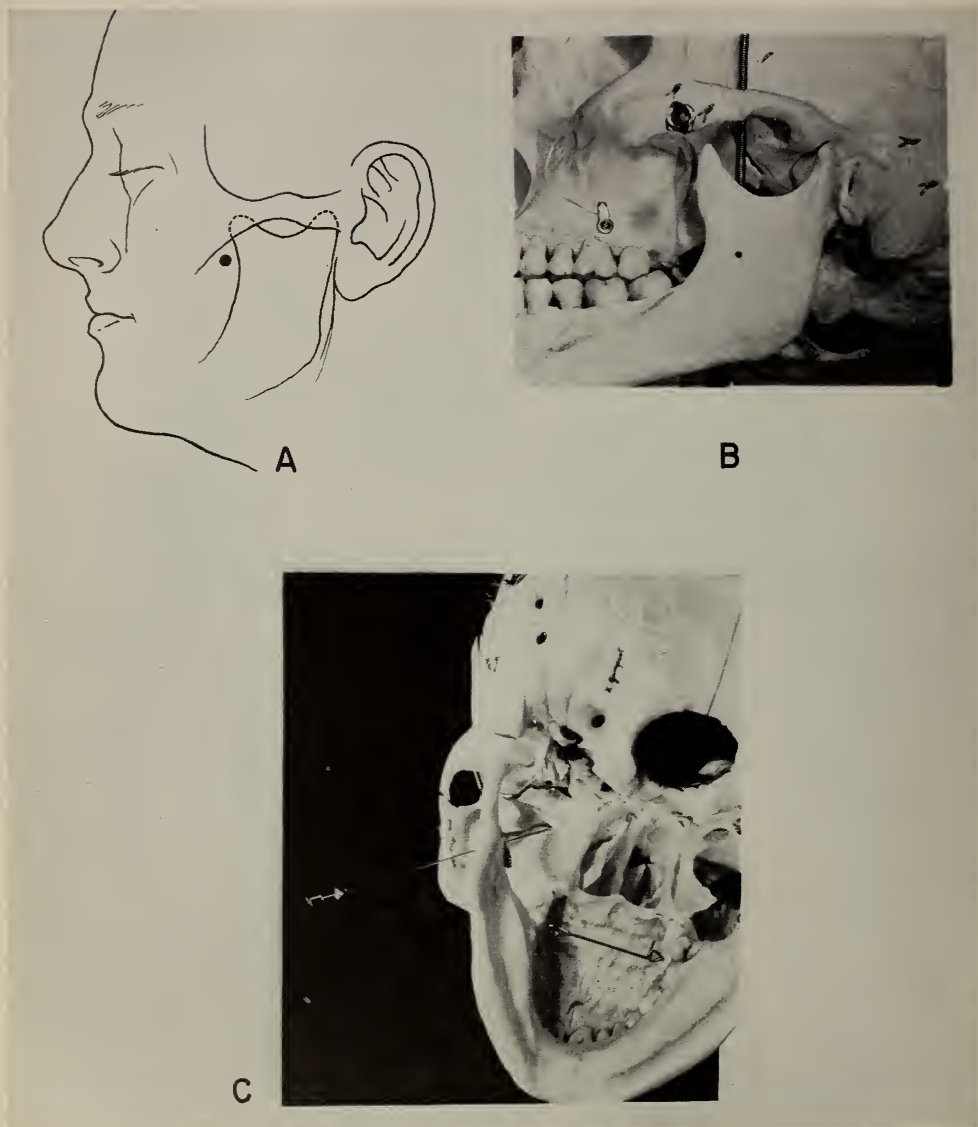


Figure 3, A, B, and C.—Maxillary nerve block.

Extraoral technique. The procedure is best performed with the patient lying supine on the operating table with the side to be anesthetized slightly upward. After a wheal has been made with the hypodermic needle, a 7.5 cm., No. 22 gauge needle is introduced horizontally at right angles to the cheek and inserted to a depth of approximately 2.5 cm. At this point the maxillary tuberosity is usually encountered; the needle is disengaged from the periosteum

of the tuberosity and directed slightly backwards, clearing it; advancement upward to a depth of 5 cm. is then made, when bone will be encountered again. During the entire process, aspiration is done continually, as well as deposition of small amounts of solution to render the procedure less painful. If the needle has been properly directed, the point will now be in the pterygopalatine fossa at the region of the foramen rotundum (Figure 3, B and C). At the fora-

men 3 to 4 cc. of 2 per cent lidocaine can be introduced slowly. Analgesia for operation should develop in 5 to 15 minutes; the duration is from an hour to an hour and a half and is obviously greater if small amounts of epinephrine have been combined with the anesthetic agent. Since care must be taken to avoid entering the orbit, the patient should be closely questioned about any pain in the orbital area. In rare instances, if the needle has been advanced too far superiorly in the pterygopalatine fossa, it is possible to enter the infraorbital fissure and cause damage to the structures of the orbit.

Sphenopalatine Ganglion Block

The sphenopalatine ganglion rests in the pterygo-maxillary area and arises or originates from the sphenopalatine branch of the maxillary division of the trigeminal nerve. The fossa in which it rests can be reached by passing a needle through the posterior palatine foramen and canal. The foramen is medial to the second molar tooth at the posterior end of the hard palate. Indications for this block are anesthesia for operations on the maxillary sinus and, therapeutically, for neuralgia involving the sphenopalatine ganglion and the inner nerve loop.

Technique. The patient is placed with the head back and the mouth open as wide as is possible. The region of the posterior palatine foramen is palpated and a small wheal is raised at this site. Next, a long, angled No. 22 gauge needle is introduced into the palatine foramen and canal and is advanced approximately 1 inch in depth until it strikes a bony plate. Aspiration is done at appropriate intervals to make sure that the needle is not threaded into a vein or artery. Usually 2 cc. of 1 to 2 per cent lidocaine solution is sufficient for adequate anesthesia of the ganglion. If, as in some cases, the needle will not traverse the posterior palatine canal, the foramen rotundum nerve block, previously described, can be used, since essentially the same topographical areas of anesthesia will result.

Incisive Foramen Block or Anterior Palatine Injection

The two nasopalatine nerves supply sensation to and ramify through the maxillary bones, the lingual alveolar plate, and the periosteum and mucous membrane on the central and lateral incisors and the cuspid teeth where they interlace with the anterior palatine nerves coming from the posterior palatine foramina.

Technique. For adequate anesthesia of this area the incisive foramen is entered in the following manner. A 1-inch, No. 23 or No. 25 gauge needle is introduced just lateral to the central papilla behind the incisive teeth and a few drops of lidocaine are deposited. This entrance avoids excessive pain. The

needle is then advanced through the papilla in a line between the two central incisor teeth and parallel to the long axes. When entrance into the foramen is made, 1 cc. of solution is released. In order to obtain complete anesthesia of the nasopalatine nerves, the incisive foramen must be entered.

Posterior Palatine Block

Posterior palatine block is necessary for any operation that involves the palatal alveolar plate or that invests soft tissues, and for extractions of the posterior molar teeth. The anterior palatine nerve enters the oral cavity at the posterior palatine foramen opposite to the second molar and innervates the palatal plate of the molars and bicuspid, but not the dental pulps of those teeth.

Landmarks. The position of the posterior palatine foramen is usually marked by a depression. If this is not the case, an interruption of continuity of the bony hard palate, which is medial to the second molar, can be palpated with a finger. At that point a curved tonsil needle may be introduced into the foramen and approximately 1 cc. of 2 per cent lidocaine released. The depth reached need not be so great as that necessary for anesthesia of the sphenopalatine ganglion. Anesthesia is established in approximately 2 minutes after injection. The anterior palatine nerve interlaces with the nasopalatine nerve at the cuspid tooth. Both nerves must be anesthetized to produce complete palatal anesthesia.

Tuberosity Block

Tuberosity block is used for anesthesia of the posterior superior alveolar nerve. The posterior superior alveolar nerve supplies the second and third molars and half of the first molar with sensation, as well as the buccogingival tissue contiguous to these teeth. The foramen for this nerve is located on the zygomatic surface of the maxilla.

Technique. A 4 cm., No. 21 gauge needle is inserted into the mucosa at the reflection of the mucous membrane behind the last superior molar by first holding the syringe parallel with the alveolar plate and at an angle of 45 degrees with the occlusal surface of the upper teeth. The needle is then advanced through the buccinator muscle and the syringe is rotated outward as far as the angle of the mouth will permit. The needle is advanced superiorly and internally with care to hug the tuberosity. A few drops of solution are injected as the needle advances and, at the correct depth, the bulk of the solution is deposited. Two cubic centimeters of lidocaine is usually effective. In this particular injection, care should be taken to avoid the pterygoid venous plexus by remaining close to the bone and by making sure through aspiration before injection of the an-

esthetic agent. The procedure does not produce anesthesia of the palate, and for complete anesthesia of the posterior portion of the alveolar ridge, it must be combined with the block of the posterior palatine foramen.

Anterior Infraorbital Block

If anterior infraorbital block is properly carried out, the bicuspid as well as the anterior teeth are anesthetized. In some cases the three upper molars and contiguous alveolar plate can also be anesthetized. The sphenopalatine ganglion is occasionally reached with complete inner loop anesthesia. The success varies with both the anatomical nature of the foramen and the method of introduction.

Intraoral technique. An imaginary line is established from the pupil of the patient's eye to the long axis of the second bicuspid tooth. The infraorbital ridge is palpated, and the infraorbital foramen, which will be found slightly below on the imaginary line, may be palpated with the index finger while the lip is retracted with the thumb. A 1½ inch, No. 21 gauge needle is introduced into the reflection of the mucous membrane as high as possible and slightly away from the bone. The tip of the needle is introduced along the line to the foramen, and the bulk of solution is deposited at this point.

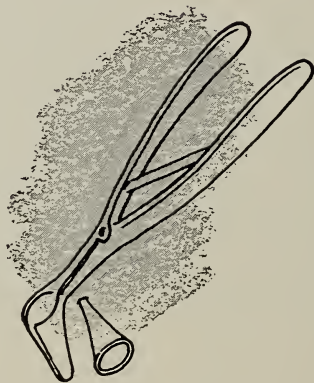
Extraoral technique. On the same axis as previ-

ously mentioned, the foramen is palpated approximately one-half inch below the infraorbital ridge. After insertion into the skin, a 1-inch, No. 25 gauge needle is directed at right angles to the foramen which opens slightly downward and medialward. After partial anesthesia of the soft tissues, the foramen aperture is sought; when it is finally gained, the solution is deposited to the extent of approximately 2 cc. or more of lidocaine. When it is desired to operate to the midline, the interlacing branches of the opposite infraorbital nerve must be blocked in the same manner.

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Hypophysectomy or Adrenalectomy?

Their Use in Management of Advanced Malignant Disease As Observed in Clinics in Europe

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IT HAS BEEN KNOWN for some time that cancer of the breast and of the prostate gland can be controlled by the administration of sex hormones because they are hormone dependent tumors. In 1896 George Beatson,¹ an English surgeon, published the first report on the effect of the removal of the ovaries as a method of treatment of cancer of the breast. Lett⁶ reported 99 cases of oophorectomy for the late stages of mammary carcinoma in 1905. During the next 50 years radiation was used to induce menopause, and oophorectomy fell into disuse. It was demonstrated by Huggins and Bergenstal⁴ in 1951 that the adrenal cortical hormones sustained mammary cancer and that their withdrawal was followed by pronounced regression of the tumor. The discovery that patients who have had the adrenal glands removed can survive a long time on cortisone has been a stimulus to adrenalectomy as a method of treatment.

The work of Huggins and co-workers^{3,4,5} pointed out that gonadectomy is followed by a compensatory hypertrophy of the adrenal glands and an increase in the function of the adrenal cortex, that removal of the testes in man is followed by an increase in the content of 17-ketosteroids in the urine, which can be reduced by bilateral adrenalectomy, and that after oophorectomy women continue to excrete estrogens in the urine which disappear from the urine after adrenalectomy. Gonadectomy and adrenalectomy appear to eliminate all the sources of hormones which can stimulate the growth of carcinoma of the mammary and prostate gland and to produce a physiological environment low in steroids.

Carcinomas of the breast and prostate gland sometimes are favorably affected by alterations in the hormonal environment brought about by castration, by treatment with appropriate hormones, and by adrenalectomy. The effect of the hormone treatment in these cases has been attributed to a depressing action on the hormone production of the pituitary gland. Other tumors which have been responsive to the change in the hormone medium brought about by hypophysectomy are chorionepitheliomas and malignant melanoma.

- The dependence of cancer of the breast and prostate gland upon sex hormones has led to an attack on this problem by way of adrenalectomy with castration or by hypophysectomy when hormone treatment has failed. The survival period of patients who have had adrenalectomy or hypophysectomy has been prolonged by use of cortisone. The risk of either operation is reasonable and maintenance of life on cortisone is simple. The results are encouraging, with a tendency in favor of hypophysectomy. It seems justifiable to advise operation at an early stage of the disease.

EXPERIENCE WITH HYPOPHYSECTOMY

While visiting with a number of neurosurgeons in England and in continental Europe in 1955, the author became aware of the amount of recent work which has been done by them in connection with this problem. Olivecrona and Luft⁷ at Stockholm had performed hypophysectomy in 12 cases of malignant tumor, all in advanced stage, after all other available methods of treatment had been tried and had failed. There was one case of carcinoma of the prostate gland, one of malignant chorionepithelioma, one of hypernephroma and nine cases of carcinoma of the breast. The operation was well tolerated in every case and there were no deaths or serious complications of any kind as a result of it. In the one case of cancer of the prostate, inability to urinate abated and pain disappeared within two weeks after the operation. However, symptoms reappeared after three months and the patient died. At autopsy the adrenal glands were observed to be very small and there remained small rests of regenerating hypophyseal tissue in the pituitary fossa. In most of the nine cases of carcinoma of the breast the patients had huge lesions recurrent after mastectomy, as well as pulmonary and other metastatic lesions. Five of the patients had had hypophysectomy only a short time before the author observed them—two after having had cerebellar metastatic tumors removed. All were doing well. In two cases the adrenal test indicated that functioning pituitary tissue was still present, and the patients showed no appreciable improvement. The rest of the patients were still alive, but it was felt by the surgeons that it was too early to decide on the ultimate effects of hypophysectomy since it had

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been done in these cases only two or three years previously.

Hormonal control as an approach to the problem of advanced cancer of the prostate or of the breast was taken up in 1953 by Mr. Murray A. Falconer, director of Maudsley neurosurgical unit of Guy's Hospital, London. Falconer and a co-worker, Peter Schurr, had treated almost 50 patients with carcinoma of the breast or of the prostate gland, about half of them by adrenalectomy and half by hypophysectomy. At the time of the author's visit at the hospital during the summer of 1955 it seemed that the patients who had had hypophysectomy had better relief from pain and metastasis and better regression of visible and palpable lesions than the patients who had had adrenalectomy. None of the patients had been treated by x-ray or by implantation of radioactive material.

EXPERIENCE WITH ADRENALECTOMY

Sir Stanford Cade,² senior surgeon at Westminster Hospital, which is in no way connected with Maudsley, did bilateral adrenalectomy in 56 patients with disseminated mammary cancer in the three-year period 1953-1955. He reported an extended survival on cortisone maintenance up to 24 months. In some cases both subjective and objective improvement was obtained—relief of pain from skeletal metastasis, regression of visible and palpable lesions, and union of pathological fractures. Beneficial effect of some degree was noted in about 60 per cent of the patients, and in about 23 per cent of the patients who benefited the improvement was quite remarkable and surprising.

SELECTION OF PATIENTS

In both these series of adrenalectomy and hypophysectomy, there were widespread skeletal, visceral and soft tissue metastasis and the expectation of life was very limited. Since they were done on patients to whom nothing further could be offered, the operations were put to a very severe test. It was found that patients with disseminated disease in the pulmonary lymphatics, with involvement of the pericardium and the heart were of high operative risk and the operations were not done on such patients. In fact, involvement of the lungs and heart to any extent which impaired vital function was regarded as the main contraindication for the operation.

MANAGEMENT

In both series, before adrenalectomy with castration was done, all the patients were carefully assessed as regards the extent of the disease and the general state of health by clinical, radiological and chemical investigations. In addition, the output of 17-ketosteroids and estrogens was studied and

Thorn's test for adrenocortical function was done. The preoperative preparation consisted of the correction of the state of the blood by transfusion and the administration of cortisone. In one of the series only cortisone was used. There seemed to be no need for desoxycorticosterone. Cortisone acetate was given in 100 mg. doses by intramuscular injection at periods of 38 hours, 24 hours and 1 hour before the operation.

During the operation and in the immediate post-operative period norepinephrine was used only if there was pronounced decrease in the blood pressure—as an emergency measure. On the first postoperative day cortisone was given by injection in 100 mg. doses every six hours; on the second day, 50 mg. at six-hour intervals; then from the third to the fifth postoperative day 25 mg. of cortisone acetate by mouth every six hours. The dosage then was further reduced to 75 mg. a day and finally to 50 mg. daily as a maintenance dose. Patients were often given instructions about the need of extra cortisone during intercurrent illness or following an operation or an accident.

In doing hypophysectomy the necessity of preventing brain edema of any great degree has to be considered. It is well established that corticotropin and cortisone, as well as desoxycorticosterone, bring about a retention of electrolytes in fluid. When using corticotropin and desoxycorticosterone, and to a certain degree even cortisone, this retention reaches its highest value during the first days of hormone administration and is followed by a period of increased excretion. It is advisable to perform the operation during this period of increased excretion. For one week before operation, cortisone, 50 mg. per day, and testosterone propionate, 25 mg. a day, were given.

After operation, decreasing hormone dosages were given. The permanent hormone treatment can often be prescribed from the third or fourth week on. Cortisone is then given in a dose of 12.5 mg. ($\frac{1}{2}$ tablet) twice daily and later on, combined with 0.2 to 0.4 mg. of thyroxin. In the series here considered, testosterone propionate was omitted in the permanent substitution therapy in order not to obscure the results in cancer of the prostate gland.

ADRENALECTOMY WITH CASTRATION

Bilateral adrenalectomy and oophorectomy can be done in one stage. The practice at present is to carry out bilateral oophorectomy and unilateral adrenalectomy in one stage and postpone the second adrenalectomy for seven days. The best approach to the adrenal gland is through the bed of the twelfth rib with the patient lying on the side in the position usually adopted for adrenal operations, either through an incision parallel with the vertebral col-

umn or a flank incision. The operation is technically simple but the adrenal gland must be handled with care, for it is friable and in some patients a pronounced fall or rise in the blood pressure occurs when the gland is manipulated. Hemorrhage is controlled by careful ligation of the adrenal veins, which show considerable anatomical variations and with which the surgeon should be familiar. Accidents which can be guarded against are injury to the pleura, to the renal vein or to the inferior vena cava. Oophorectomy is done through a lower midline abdominal incision at the time the first adrenal gland is removed. In most patients convalescence is smooth and the postoperative course gives rise to anxiety to the surgeon only in patients with cardiac or pulmonary involvement, by disease or by postoperative difficulties.

HYPOPHYSECTOMY

The pituitary region is usually exposed by a right pituitary skin and bone flap entrance, and the arachnoid membrane in the chiasmal cistern is removed as completely as possible. The pituitary stock is hidden beneath an optic nerve. The nerve is retracted with a blunt hook sufficient to expose the stock. After the pituitary stock has been exposed, silver clips are applied to it and it is divided. The diaphragm of the sella is thin around the insertion of the stock. In the periphery a venous ring of varying size can be seen and the diaphragm is opened just inside this ring. The gland is mobilized with blunt instruments. In favorable cases the entire gland can be lifted up from the sella and removed. In cases in which this cannot be done, piecemeal removal with rongeurs and spoon is carried out. Even if a tiny piece of viable glandular tissue is left behind, it may regenerate and the result will be a poor one. So far, the best method of removing pituitary remnants is to pack the sella with a cotton pledget and then inject it with Zenker's solution. This is then

allowed to remain in the sella for a couple of minutes. The procedure is repeated until the lining of the sella appears thoroughly cauterized.

CONCLUSION

The surgeons in England who are systematically and extensively investigating the use of hypophysectomy and adrenalectomy in the management of advanced cancer of the prostate and the breast do not feel that they have a large enough series of cases with results from which to draw reliable statistical conclusions. However, they recognize a trend in favor of hypophysectomy. After reviewing the histories of a number of the cases in which they have used the operations, it is the author's feeling that if the regression of advanced malignant disease that was observed in these cases can be obtained by these operations, it would be worth the effort and the risks involved to intervene sooner, especially in cases where there is the earliest evidence of metastasis after mastectomy and after male hormone therapy for carcinoma of the prostate gland has failed.

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CASE REPORTS

Recurrent Acute Gastric Volvulus

A New Method of Treatment

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DIAGNOSIS of the "acute abdomen" is usually a problem for surgeons. In differentiation the common conditions must be considered first but unusual conditions must be kept in mind too. Acute volvulus of the stomach is a rare condition. Most surgeons go through a complete residency and a lifetime of experience without seeing a case. Jenkinson and Bate⁷ in January, 1953, found reports of 100 cases in a review of the American and British literature. However, many of these cases should not have been included, for among them were cases in which there was a high transverse position without definite torsion of the organ, and also cases of simple rotation without volvulus. High positions of the stomach with rotation of the entire viscus even with the greater curvature at a higher level than the lesser curvature are not uncommon, particularly in hypersthenic patients. These conditions should not be confused with true volvulus. In fact, the incidence of volvulus is less in such patients than in leptosomatic persons.

ETIOLOGY

Since Berti² first reported on volvulus of the stomach in 1866, many factors have been cited as a cause, among which may be listed the following:

A. GASTRIC

1. Elongation, relaxation or absence of the suspensory ligaments, namely the gastrocolic and/or gastrohepatic omenta and the transverse mesocolon.
2. Tumors of or near the stomach.
3. Gastric distention from overeating or aerophagia.
4. Inflammatory processes of or near the stomach.
5. Persistent vomiting.

B. PERIGASTRIC

1. Abnormal length of the transverse colon and/or mesocolon. "Aerocoly" or gaseous distention of the colon.
2. Eventration of the diaphragm and esophageal hernia.

3. Phrenic interruption (postsurgical).
4. Displacement by neighboring organs such as abnormal left lobe of the liver, gravid uterus, etc.
5. Prolonged use of girdles or other excessive pressure over the abdomen.

While it is impossible to prove a definite etiologic relationship between the above factors and volvulus of the stomach, when the latter condition is accompanied by other intraabdominal pathologic change, it seems likely that the twisting of the stomach has occurred as a complication of the other abnormality. In particular, the role of the colon has been emphasized. As the stomach twists, it drags the transverse colon with it, by reason of its attachment to the gastrocolic ligament. Conversely, colonic distention can cause torsion because of this same ligament, which, unless attenuated or absent, may force both organs to move in unison. There are a few reports in which the term *idiopathic* is appended because of the absence of any abnormal findings at operation. However, it is doubtful if volvulus can occur without at least attenuation of the gastric attachments.

CLASSIFICATION OF VOLVULUS

I. ANATOMIC TYPE (AXIS OF ROTATION)

A. Volvulus Mesenterio-Axialis

The stomach is twisted around the line which connects the middle of the lesser with the middle of the greater curvature, thus producing a torsion of the stomach rather than a true volvulus. Characteristically, with rotation of the stomach about the long axis of the gastrohepatic omentum the pyloric antrum twists from right to left.

B. Volvulus Organo-Axialis

The organ is rotated around the line which connects the cardia with the pylorus. The stomach is twisted upward along the long axis of the organ. This anatomic configuration represents true volvulus. It may appear in any of the following varieties:

1. *Supracolic*. The stomach remains cephalad to the transverse colon even when twisted.
2. *Infracolic*. The rotation of the greater curvature pulls the transverse colon upward until the latter lies above the level of the stomach, having rotated at least 180°. This arrangement is very rare;

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it may occur with a normal or short gastrocolic omentum.

3. *Anterior.* The greater curvature rolls along the anterior abdominal wall upward on the anterior surface of the stomach. The stomach is then veiled by the gastrocolic ligament.

4. *Posterior.* The greater curvature twists cephalad along the posterior abdominal wall.

II. EXTENT

A. Total. Torsion is 180° or more.

B. Partial. Less than 180° .

III. SEVERITY

A. Acute.

B. Chronic. Recurrent milder symptoms or symptomless.

DIAGNOSIS

Gastric volvulus may be symptomless or may cause an "acute abdomen," depending upon the degree of rotation. Beyond 180° , signs of complete obstruction and strangulation appear; death may occur unless the volvulus is reduced surgically. In considering this condition, Borchardt and Lenormant's triad should be remembered: (1) Vigorous unproductive retching, (2) epigastric pain, and (3) the physician's inability to pass a gastric tube. X-ray studies show the stomach in a high position, with a cascade appearance of the cardia, an hourglass configuration of the pars media, and visualization of the greater curvature above the lesser.^{1,6,9} Gastric volvulus must be differentiated from all those conditions which can cause acute epigastric pain—*i.e.*, pancreatitis, mesenteric embolus, cholecystitis, perforated ulcer and others. However, the diagnosis can be made readily if one remembers the significance of the patient's unsuccessful attempts at vomiting coupled with the inability to pass a decompressive tube. Bockus³ emphasizes the absence of bile when vomiting does occur, presumably due to pyloric obstruction.

TREATMENT

Medical treatment consisting of rest, bowel decompression (where possible), antispasmodics and parenteral alimentation, is often successful. Most patients will have recurrences, however, and operation is indicated even in the absence of other intra-abdominal disease.

The surgical treatment requires primarily reduction of the volvulus and correction of any associated disease. In the absence of other organic disease, surgical correction should be aimed at prevention of recurrence. Gastrogastrostomy, gastroenterostomy, gastric resection, and anterior gastropexy have all been suggested as means of immobilizing the stomach. In correspondence with several national authorities and clinics^{4,8,14} there were no reports of any personal experience with surgical treatment of this



Figure 1.*—Preoperative x-ray film. Note the greater curvature located above the lesser curvature.

condition. On a theoretical basis, Ravdin¹¹ and Marshall¹⁰ both suggested gastric resection if remedial measures were indicated.

The ensuing case report describes a relatively uncomplicated surgical technique utilized in the successful correction of a recurrent gastric volvulus.

REPORT OF A CASE

A 37-year-old Caucasian woman was admitted to Cedars of Lebanon Hospital in August, 1955, with the following history.

In 1953 the patient underwent appendectomy for "acute surgical abdomen." The pathologist reported the appendix normal. The operating surgeon was unable to find any pathologic condition in the abdomen by exploration through the McBurney incision. However, he did note extreme friability of the mesentery of the small bowel and inflammation of the serosa of both small and large bowel.

In October, 1954, following a full meal, the patient had severe epigastric cramping pains which caused her to writhe. Vomiting of the recently ingested food followed, apparently not bile stained. Within three hours chills developed. In a report of physical examination done at the time, rebound tenderness was noted. The patient became semistuporous and was admitted to the hospital.

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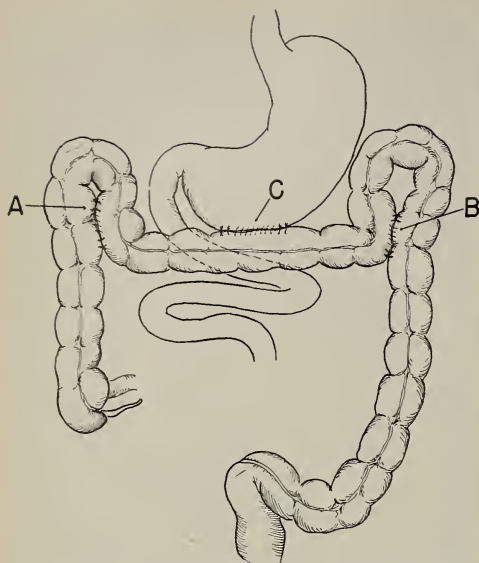


Figure 2.—A, B, C = seromuscular approximating sutures.

At the time of admittance, leukocytes numbered 14,500 per cu. mm. with a pronounced shift to the left in cell differential. The erythrocyte content and the blood amylase were within normal limits. Upon urinalysis a 2 plus reaction for albumin and a trace of acetone were noted. The sedimentation rate was 23 mm. in one hour (corrected). When all the symptoms except mild epigastric tenderness subsided, the patient was permitted to leave the hospital in 48 hours. In x-ray studies after discharge from the hospital the gallbladder and colon appeared normal. However, in upper gastrointestinal tract films a reversible gastric volvulus was observed. Whenever the patient was shifted from the postero-anterior to a full lateral position, a complete torsion of the curvatures of the stomach occurred (Figure 1). This phenomenon was repeatedly elicited on later examinations, but was always readily reducible with change in the patient's position.

As the patient had had two former severe attacks requiring hospitalization, and since positional changes produced epigastric discomfort and a "pulling feeling at the throat," surgical correction was agreed upon. Gastrogastrostomy was not applicable to this type of volvulus although it has been used in cases of twisting of the stomach about its mesenteric axis. Gastroenterostomy seemed to have the disadvantage of disposing toward a possible stomal ulcer later. Gastric resection appeared too formidable a procedure to perform in a woman 37 years of age with no demonstrable intragastric disease. Conversely, gastropexy by means of fixing the omentum or the gastric wall to the parietal peritoneum seemed



Figure 3.*—Postoperative film. The antrum is fixed to the transverse colon and volvulus cannot occur.

to be an inadequate measure for securing the stomach in position. It did appear feasible to suture the greater curvature to the transverse colon with seromuscular sutures to aid in fixation. However, with a large redundant colon this maneuver alone would undoubtedly prove inadequate. Hence, it was planned to unite the ascending colon to the hepatic portion of the transverse colon with seromuscular sutures and carry out a similar procedure on the splenic flexure so as to anchor the transverse colon between these two points.

Under spinal anesthesia a supraumbilical transverse incision was performed on August 3, 1955. No abnormality was noted on palpation of the small bowel, kidneys, spleen, liver, esophageal hiatus, pancreas and gallbladder. There was no palpable pathologic condition in the pelvis other than a few adhesions about the cecum from the previous appendectomy. The transverse colon was decidedly redundant, the mesocolon very lax. Nothing remarkable was noted about the gastrocolic ligament, although there was some elongation of the gastrohepatic ligament. The hepatic and splenic flexures were plicated by means of seromuscular sutures extended for approximately 3 cm. on each side as shown in Figure 2. It was noted at this point that the maneuver converted the redundant transverse colon into a fixed band (as between points A and B in Figure 2). The gastrocolic omentum was then divided from the large bowel and a similar plication was performed

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between the greater curvature of the stomach and the colon for a distance of approximately 12 cm. This appeared to fix the stomach firmly to the now nonyielding transverse colon. All three plications were done in a similar manner. Two interrupted No. 00 cotton sutures on either end reinforced a continuous row of No. 00 chromic catgut. All sutures were seromuscular. No gastroenterostomy was performed. At the completion of the operation, when the omentum was replaced in the peritoneal cavity it was noted that the stomach was firmly fixed in position. The patient tolerated the procedure very well. Gastric suction and parenteral alimentation were carried out for 48 hours. The patient was discharged from the hospital five days following the operation.

A month after the operation a gastrointestinal series and barium enema study were done (Figure 3). While the stomach showed normal mobility and pliability, there was not a vestige of the former hypermobility. Films taken in all positions, including deep Trendelenberg, demonstrated excellent fixation of the transverse colon and stomach.

Completely asymptomatic since the operation, she no longer feels any discomfort even when she assumes positions that formerly caused distress.

SUMMARY

1. A rare case of idiopathic gastric volvulus of the organo-axialis type is presented.
2. The literature on this subject is reviewed.
3. A new surgical method, used with excellent result, is presented for the treatment of this unusual condition.

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Calcified Meconium Abscess Causing Intestinal Obstruction in an Infant

Report of a Case and Review of the Subject

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THE PATIENT, a boy, was delivered by cesarean section on September 12, 1949, a full term, viable infant weighing 6 pounds 5 ounces.

The prenatal course was possibly of some significance in that in an automobile accident on June 21, 1949, the mother was thrown beneath the dashboard and struck her abdomen. The following day, although she complained of pain and tenderness in the midabdomen, there was no objective evidence of significant trauma, and the symptoms gradually subsided. On August 22, 1949, two months after the accident, roentgenograms were taken to determine the fetal age. In films an oval, calcified ring was noted in the vicinity of the fetal abdomen (Figure 1). In retrospect, this was the mass later discovered within the infant's abdomen at birth, but was interpreted at the time as calcification within a fibromyoma of the mother's uterus.

Upon examination of the infant at birth, a hard, oval mass was noted beneath the abdominal wall just cephalad to the umbilicus. It was approximately 3 by 5 cm. in diameter. Except for undescended testes, no other abnormality was observed.

Roentgenograms taken the day after birth (Figure 2) showed an oval calcified intraabdominal mass 3 by 5 cm. in diameter adjacent to the anterior abdominal wall in the vicinity of the umbilicus. Also visible were a few scattered small areas of calcification elsewhere within the abdomen. Similar calcifications have been reported by Neuhauser⁸ as suggestive of meconium peritonitis.

The diagnostic considerations were calcification in a hematoma or abscess or a teratoma. As the infant was asymptomatic, operation was postponed until he was older.

The infant took feedings well and passed normal meconium and subsequently had light yellow stools. He gained weight progressively and remained asymptomatic until November 27, 1949. He was then ten weeks old and weighed 10 pounds, 8 ounces. On that day, he refused feedings and vomited. The abdomen became distended and the baby cried intermittently as though in pain. He was hospitalized with a diagnosis of obstruction of the small bowel. Roentgenograms taken on entry showed no change in the calcified mass. In the next few days the symptoms subsided spontaneously on conservative management.

A week later the patient reentered the hospital with similar symptoms. He was moderately dehydrated and the abdomen was distended and tympan-

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Figure 1.—Roentgenogram of mother's abdomen at eighth month of pregnancy showing calcified ring in fetal abdomen.

itic. The clinical course was that of partial small bowel obstruction with failure to improve, and after hydration he was taken to surgery.

The abdomen was opened through a transverse incision directly over the mass and extending beyond it on both sides, permitting access to the peritoneal cavity. The mass was found to be calcified and about the size of a small chicken egg. It was firmly adherent to the abdominal wall, to the liver and to several loops of jejunum which were kinked and partially obstructed. In dissecting the mass from the bowel, a communication was encountered between its interior and one loop of jejunum through a hole 1 cm. in diameter. The mass was dissected free, the opening into the jejunum was closed and the abdomen was closed in layers. The patient made a good recovery and remained asymptomatic to the time of most recent observation some six years later.

The gross specimen is shown in Figure 3. The wall averaged 0.5 cm. in thickness. Microscopic examination showed it to be composed of dense fibrous tissue with calcified plaques interspersed throughout. There were no endothelial or muscular elements and no structures resembling intestinal wall. Iron pigment was not observed in specially stained sections.

DIFFERENTIAL DIAGNOSIS

There are several diagnostic possibilities in the present case, the most likely of which is a calcified meconium abscess. The others are calcification in a

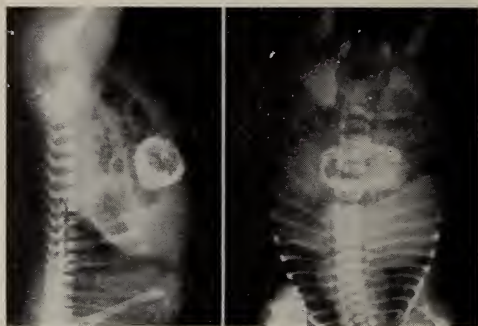


Figure 2.—Roentgenograms of infant's abdomen at birth.



Figure 3.—Photograph of the calcified cyst removed at laparotomy for intestinal obstruction. Arrow points to hole which communicated with jejunal lumen.

hematoma, enterogenous diverticulum, vitelline duct or omphalomesenteric cyst, urachal cyst or mesenteric cyst.

Calcification in a hematoma can almost certainly be excluded by the absence of iron pigment in special stains.

Developmental enterogenous cysts and diverticula and vitelline duct cysts practically always have some demonstrable muscular or epithelial structures resembling small intestine. They rarely undergo calcification although Evans,⁵ in a very complete paper on this subject, cited a case of vitelline duct cyst with partial calcification. However, when any connection with the intestine exists in vitelline duct cysts, it is with the ileum. In the case herein reported, the connection was with the upper jejunum.

Urachal cysts are lined with bladder epithelium

and are located caudal to the umbilicus, somewhere between it and the superior surface of the bladder.

Mesenteric cysts occur between the leaves of the mesentery. Vaughn and co-workers¹⁰ reported a case of a calcified mesenteric cyst in an adult with a preoperative appearance by roentgenogram quite similar to that in the present case. However, the location between the leaves of the mesentery established it as a mesenteric cyst.

Calcified Meconium Abscess

By the process of elimination, the most likely diagnosis is a calcified meconium abscess secondary to *in utero* perforation of the jejunum, and meconium peritonitis, sometime prior to the eighth month of fetal life.

In support of this diagnosis was the presence of scattered small areas of calcification elsewhere in the infant's abdomen seen on the initial postnatal roentgenogram. It is well known that sterile meconium in the free peritoneal cavity causes a nonbacterial, foreign body peritonitis and produces dense fibrous adhesions and calcified plaques. According to Boikan,¹ who wrote a very complete paper on the subject, with an interesting discussion of the etiology and pathology, the calcification is most likely due to precipitation of the tissue fluids by the broken-down fatty constituents of meconium. Many case reports of meconium peritonitis mention such calcification.^{1,2,3,4,8} According to Litten,⁷ it may occur within 24 hours after perforation. Neuhauser⁸ described the characteristic roentgenographic picture as almost pathognomonic. It consists of multiple calcified areas diffusely spread throughout the abdomen with occasional larger localized plaques incorporated in the wall of an abscess.

Dubler,⁴ as far back as 1888, reported a similar case and he described the pathological observations in great detail. The case was that of a newborn infant who died of pneumonia and at autopsy was observed to have numerous adhesions and calcified plaques and to have a calcified cyst in the abdomen which Dubler considered to be the result of an intrauterine perforation of the descending colon. A translation of his description is as follows: "A cyst the size of a pigeon egg, the wall of which was of irregular contour, nodular and encrusted with chalk. A slide from the wall showed connective tissue and chalky masses but nowhere any hint of a distinct epithelial layer, glandular tubes or muscle fibers." This description very closely fits the calcified, cyst-like structure removed in the present case.

Meconium Peritonitis

Meconium peritonitis is relatively uncommon. Since Simpson⁹ reported 25 cases in 1838 there have been a little over 150 cases reported to date. The *Current List of Medical Literature* lists papers reporting about three to four new cases a year.

The etiologic process in cases with primary intestinal obstruction is understandable. Perforation results secondary to the obstruction, which may be

due to congenital stenosis, atresia, imperforate anus or meconium stasis. However, 50 per cent of cases occur without obstruction and the explanations of the perforation are not entirely satisfactory. Boikan,¹ after considering the possible causes in detail, concluded that it was due, in the case he reported, to a primary vascular insufficiency of the intestinal wall. Other explanations are trauma during labor or delivery, and congenital and acquired diverticula. Franklin and Hosford⁶ encountered two cases in which perforation was found without obstruction at the time of operation. It is conceivable that the abdominal trauma which the mother of the infant, in the case herein reported, received when she was six months pregnant was sufficient to produce an intestinal perforation in the fetus.

The clinical picture of meconium peritonitis is variable, depending on the time of perforation, the amount of spillage and various other factors. The typical picture is that of abdominal distention and severe paralytic ileus secondary to peritonitis, becoming manifest within a few hours after birth. The characteristic calcification on roentgenograms is helpful in determining the etiology preoperatively. The mortality rate in such cases is very high in spite of early intervention. On the other hand, if the perforation has occurred and subsequently sealed in the absence of obstruction, quite some time prior to birth, the resulting peritonitis is sterile and subsides leaving dense adhesions, scattered, small calcified plaques and occasionally a localized encapsulated collection of meconium surrounded by a fibrous wall which becomes impregnated with calcium. The present case is the only one the authors could find on record in which the asymptomatic, calcified cyst was the presenting finding.

The treatment of those infants presenting a picture of acute peritonitis is operative intervention as soon as the diagnosis is made and the condition of the baby permits. It must be realized that time is important, for delay of several hours may mean that a sterile, chemical and foreign body peritonitis will become bacterial. Prompt administration of antibiotics may prevent this. It is wise to empty the stomach by intubation prior to operation but valuable time should not be lost in attempting to intubate and decompress the small bowel. The site of perforation should be identified and closed promptly and the possibility of an underlying obstruction sought and rectified by a bypassing or other suitable procedure if the child's condition permits. Often the latter is not possible and a temporary tube vent or, in the case of a meconium stasis, a double barreled Mikulicz resection and enterostomy may be a life-saving measure.

SUMMARY

A case is presented in which a previously undiagnosed, calcified, intraabdominal cyst produced intestinal obstruction in a ten weeks old infant and was removed at the time of laparotomy for the obstruc-

tion, the infant making an uneventful recovery. The cyst was present and appeared as a calcified ring on roentgenograms during the eighth month of fetal life. The differential diagnosis is discussed and the cyst is concluded to be a calcified meconium abscess. The subject of meconium peritonitis is reviewed.

490 Post Street, San Francisco 2.

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Congenital Absence of the Gallbladder

STANLEY EDWIN MONROE, M.D., and
FRANK J. RAGEN, M.D., Chula Vista

CONGENITAL ABSENCE of the gallbladder is a rare anomaly of the biliary tract. It is the purpose of this communication to report an additional case and to briefly review the literature. The approximate incidence of this anomaly, derived from autopsy statistics of several reported series, is given in Table I. It is felt that this is at best an approximation. There are a number of individual case reports that cannot be considered in estimating the incidence, since the total numbers of patients from which these are drawn is unknown. The true incidence can only be derived from autopsy statistics, since absence of a gallbladder shadow in roentgen films, following ingestion of dye, is more likely to be due to a non-functioning gallbladder than to absence of the organ.

The overall incidence based on the data in Table I is .09 per cent. However, it will be noted that the reported incidence in the pediatric age group (0.37 per cent in data from the Hospital for Sick Children) is considerably higher than the overall incidence. This is probably in keeping with the higher incidence of all congenital anomalies in this age group, since mild deformities which are compatible with life may go unrecognized for many years into adult life, while the more severely incapacitating anomalies usually will be recognized during the early years. Exclusive of the data on the pediatric group, the incidence in the remainder of the combined data in the Table is 0.04 per cent, which is probably more nearly the actual incidence of this anomaly in adults. A more accurate figure could only be obtained by the compilation of a large number of autopsy statistics, since the chance for error with a rare condition and a relatively small sample is quite high.

The signs and symptoms in patients with congenital absence of the gallbladder who have disease of the common duct are apparently little different from those in patients with a complete biliary tract and disease in either the gallbladder or the common duct, or both. In autopsy material the anomaly is observed about equally often in both sexes. Clinically, however, it is observed about twice as often in females as in males, which accords with the usual sex ratio in surgical disease of the biliary tract.⁵ That is, the anomaly apparently occurs as often in men as in women but disease of the common duct requiring operation is twice as frequent in women.⁵

The effect of the absence of the gallbladder on biliary function is not known, as no laboratory studies to determine the effect have been reported. Mouzas and Wilson⁸ expressed belief that there is no alteration in function. This opinion is not shared by Caylor¹ who was of the opinion that this anomaly is fairly frequently associated with disease of the remaining intact portions of the biliary tree, especially the common duct. Reports in the literature would seem to bear out this latter opinion. Thus, in a series of 60 cases of congenital absence of the gallbladder reported by Dixon and Lichtman,² 58 per cent of the patients had symptoms of cholecystic disease. Of this 58 per cent, 48 per cent had jaundice

TABLE 1.—Incidence of Congenital Absence of the Gallbladder (Data from Reports of Autopsy Series).

Data supplied by	No. Cases	No. Autopsies	Incidence (Per Cent)
†Knox ⁴	2	2000	0.04
‡Mentzer ⁵ and Nagel ⁶	1	1600	
‡Lloyd ⁷	1	5000	
‡London Hospital*.....	9	21631	
†Hospital for Sick Children*....	20	5395	0.37
Total.....	33	35626	0.09

Submitted April 12, 1956.

and 26.6 per cent had choledocholithiasis. In the same series, 73 per cent of patients past the age of 45 had symptoms of cholecystic disease. Of the cases reported in the literature almost half were discovered at operation that was done because of signs and symptoms of biliary tract disease. The others were observed incidentally, either at operation for unrelated conditions or at autopsy. This incidence is far higher than the incidence of gallbladder disease in the population at large and is suggestive of the possibility that even with an intact intrahepatic and extrahepatic ductile system, the absence of the gallbladder in some way predisposes to disease of the common duct. It should be emphasized, however, that this is an impression and that statistical proof is lacking.

The cause of this anomaly is now generally held to be a defect in the embryological development of the biliary system, although at one time it was considered possibly an acquired state most likely due to various infectious diseases, including syphilis. On the basis of a defect in embryological development, two theories have been proposed to explain absence of the gallbladder.³ The first involves a failure of the gallbladder bud to develop from the hepatic diverticulum. However, such a failure, if complete, would also result in an absence of the cystic duct. The second theory supposes failure of the gallbladder bud to resolve from its solid embryonic stage. This would not necessarily involve the cystic duct, and the explanation may be a more likely one. The biliary system is frequently the site of development anomalies. This was the subject of an excellent review by Gross³ in 1936.

Following is a report of a case of congenital absence of the gallbladder in a middle-aged man.

REPORT OF A CASE

A 46-year-old white man, was first observed in January, 1955, because of "bloating," epigastric pain and "upset stomach." The patient was well developed and well nourished and in no acute distress. Epigastric tenderness was the only abnormality noted at physical examination. X-ray examination of the gallbladder and upper gastrointestinal tract was reported as showing a nonfunctioning gallbladder,

moderate duodenal stasis, nephrolithiasis on the right, minimal hypertrophic arthritis of the lumbar spine and generalized arteriosclerosis. A low fat diet and the use of antispasmodics were prescribed. The patient was next observed in April, 1955, after several episodes of abdominal distress which were thought to be due to gallbladder disease. Cholecystectomy was scheduled but the patient died quite suddenly shortly before he was to go to the operating room.

Autopsy revealed the cause of death to be pulmonary atelectasis due to mucus plugging of the right main bronchus and, to a lesser extent, the bronchi of the left lung. Other findings of interest besides those in the biliary tree were moderately severe arteriosclerosis of both coronary arteries with narrowing of the lumen, and a small focus of myocardial scarring in the interventricular septum. The liver was grossly and microscopically normal. The gallbladder was congenitally absent. The hepatic duct was 1.0 cm. in diameter. The ductile system was probed from the ampulla of Vater to the hepatic parenchyma. The ducts contained dark green bile but no calculi or other obstruction. The hepatic ducts were traced into the liver parenchyma and no other abnormality was noted.

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EDITORIAL

Legislative Time Again

ON JANUARY 7 the California State Legislature will convene in its regular general session and will consider the mass of proposed legislation which is dumped into its hopper each odd-numbered year. In the even-numbered years the Legislature limits its deliberations to a budget and to special items.

With the reconvening of the Legislature, medicine will again be faced with the multiplicity of bills which propose to amend, alter or otherwise change the regulations under which the practice of medicine is carried on in California. It will also be confronted with various new proposals for the creation of examining or certifying boards, the extension of the scope of practice for various licentiates in the field of the healing arts or the extension of current practices into broader fields.

If the history of legislative activities of the past decade may be taken as a criterion, some 500 or more legislative proposals will demand the scrutiny of medicine's representatives in Sacramento. Each regular session for some years back has produced 5,000 or more legislative proposals, and the general rule is that about one in ten of these measures has a direct or indirect bearing on the practice of medicine or the public health.

Examples may be found in many areas and it is already apparent that some of these fields will be replowed in the 1957 session.

Some of the major issues which medicine will have to consider in the coming Legislature will be in the areas of mental health, nurse training and psychology.

In mental health, the California Medical Association has tentatively drafted a bill which would permit communities to establish community mental health centers in conjunction with general hospitals and to receive state financial assistance where needed. Two years ago the Association opposed a

proposal for setting up community mental health facilities, on the ground that the program then proposed was organized from the top down rather than from the community up. Legislative interim committees have considered this matter since the 1955 session and the committee members have been most complimentary to the C.M.A. for its draft of a proposed bill which would screen out mental health cases at home, provide treatment under controlled auspices in general hospitals and eliminate much of the need for constructing additional state facilities for custodial care of patients.

The bill now proposed by the C.M.A. has been embraced by practically all those who two years ago were ardent proponents of the measure which the Association then opposed.

In the field of nurse training, discussions are now being held between nursing, hospital, educational and medical representatives on the proposal that the training course for registered nurses be reduced from 36 to 24 months. At least one pilot study has been made in this direction and others have been got under way. Obviously, the reduction in training time, if it produces adequately trained nurses, would speed up the production of nurses and relieve an admitted shortage; however, if the shorter course would result in inferior or inadequate training, the health of the people would suffer. Undoubtedly this proposal will be due for legislative consideration, whether legislation is introduced by nursing, educational or other groups.

In psychology, the Legislature will again have before it a proposal to license or register clinical psychologists. This topic has been discussed pro and con in recent legislative sessions and the fundamental differences between the thinking of psychologists and physicians have been thoroughly aired. Where does clinical psychology stop and psychiatry begin? Can a clinical psychologist treat psychological prob-

lems without having had the training of treating the entire person? What safeguards are there for the person who may need medical treatment as well as psychological treatment and counseling? These and many more questions enter into a consideration of this matter.

In addition to these major items, it is anticipated that the usual number of technical amendments to various sections of the law will again be with us. Many of these have to do with requirements of the licensing authorities, the State Department of Health, the State Department of Mental Hygiene and other official bodies.

Pharmacy, hospitals, dispensing opticians and other groups will have their own programs, many of which will impinge on the practice of medicine and demand scrutiny by medicine's representatives. In these fields, so closely allied with medical practice, a liaison has been created over the years that effectively eliminates most of the bickering before legislative committees which might result if one group took unilateral action.

On the other hand, the "fringe" groups such as naturopathy, are expected to be out in full force with renewed demands for licensure under their own boards and for expanded limits of practice. Naturopathy is used as an example here because this group, composed mainly of chiropractors, has consistently asked for official recognition, for licensure under a board of its own choosing, for the right to use the suffix "N.D." and for the right to perform "minor surgery" and to prescribe narcotics.

The California Legislature for a number of years has opposed the creation of new licensing or registration boards. The C.M.A. has supported this stand, on the basis that every known procedure in the healing arts is already covered by one of the existing licensing boards. Those who seek new boards are obviously carving out of present practices an item here, an item there, and combining them into something different which can be controlled by the proponents without hindrance from established authorities of unquestioned integrity.

Regardless of whether the coming legislative proposals will call for the creation of new types of licenses, expand the scope of practice for certain licentiates or amend technical sections of the law, medicine will be well represented in Sacramento. Since 1932 the Public Health League of California has maintained headquarters in the state capital during legislative sessions and has worked closely with medical organizations. The legal arm of the California Medical Association has also been in extremely close contact with all legislative activities for many years and the legal services of analyzing, screening and preparing legislation have been invaluable.

This combination of legislative and legal experts

has for many years been most effective in protecting the public health and assuring proper standards for the practice of medicine. With the 1957 session, the same team will be on hand, aided by county societies and individual physicians throughout the state. Judged by past accomplishments, the 1957 legislative situation will be well in hand.

Poliomyelitis Vaccinations

WITH ONE poliomyelitis season drawing to a close and the next about six months away, health and medical authorities are planning an all-out attack on the disease.

The State Director of Public Health, Doctor Malcolm H. Merrill, has discussed with the C.M.A. Council the campaign laid out by state and local health officers and has secured Council acceptance and cooperation.

Tentatively, it is planned that a statewide drive will be started in early 1957, about February or March, to encourage all Californians under age 40 to secure polio vaccinations. If the first step in this program is successful—if large numbers of citizens avail themselves of this protection—there will be time for the second shot before the 1957 polio season gets under way.

Statistically, there are about 8,250,000 California residents under 40 years of age. These represent an overwhelming percentage of those who are normally susceptible to polio. Of this number, more than 2,000,000 have already had one shot of Salk vaccine, almost that many have had two shots and a small number have had the full course of three injections. While there may still be some disagreement as to the protective qualities of the third shot, there seems to be no argument as to the tremendous booster potentiality of the second.

The vaccine has now been proved to be about 85 per cent effective in preventing paralytic polio and about 70 per cent effective in preventing all polio forms.

There is no longer a shortage of vaccine and all indications are that an adequate supply will be on hand in early 1957 to handle the projected program.

Clinically, it is planned to leave to local determination the matter of private or public programs for vaccination. Most areas of the state have already worked out this problem in conferences between medical societies and public health officers. The personal physician occupies an important role in any community program.

Here is a prime example of cooperation between public and private physicians for the good of the people. Here is a chance for all to contribute to a decrease in the morbidity and mortality figures in California.

California MEDICAL ASSOCIATION

Transfer of Patients for Therapy

The following statement regarding requests for transfer of patients from one county to another for certain types of therapy not available locally, was prepared by the Cancer Commission of the California Medical Association.

OWING TO sensational and usually premature announcements in the daily press, monthly magazines and newsreels, many persons gain the impression that ultra high voltage radiotherapy devices have peculiar properties rendering them especially desirable in certain types of tumors. The unrestricted transfer of patients is not regarded as sound medical policy and should only be done after the most careful consideration of all the facts. The facts of the matter are as follows:

1. Megavoltage radiotherapy units have been available since 1910. At that time the first radium cannons were developed and these had energies equivalent to approximately 1.5 million electron volts. Radium cannons produce gamma rays which have similar cancer destroying properties to those of high voltage x-rays.

2. Million volt x-ray tubes have been in use since 1927. To date, none have been proved to have curative powers that do not exist in 200 KV x-ray tubes. Nevertheless, for some patients there are some technical advantages in the use of ultra high voltages.

3. Radioactive cobalt has been available for about ten years. It offers a beam with a mean energy of about 1.2 million electron volts. Its properties are similar to those of x-rays and radium. It may be used in the form of needles, solution, cannons, interstitial applicators, bombs, and so forth.

4. Very high voltage machines delivering beams of ionizing radiation with energies of millions of electron volts have been on trial for some time. They may be in the form of circular accelerators, linear accelerators and so forth. There is as yet no proof that these beams can accomplish any more than conventional x-ray beams. It is true that as much as 100 per cent of the beam of some of the ultra high voltage units penetrates to the deepest structures of the body. There is an impression that radiation sickness is less with ultra high voltage, but radiation

sickness is not a critical factor in the administration of radiotherapy to most cases. Ultra high voltage x-ray units permit the delivery of destructive doses to cancerous growths deep in the body with less damage to the skin, especially if rotational therapy is utilized. All radiation is damaging and it is impossible to completely shield the normal tissues at any voltage. However, the skilled radiotherapist, by suitable adjustment of his beams, may produce large amounts of ionizing radiation at any depth without permanently injuring the skin. This is possible with high voltage and ultra high voltage. Transient skin erythema with blistering and subsequent tanning is of no major import, and other changes are of no importance compared to the curing of cancer.

5. Research is continuing in these fields of high energy radiotherapy. Just as soon as improved cures are obtained by such means, announcement of that fact will be made in scientific medical journals and in channels of popular medical information. Significant improvements in surgical or radiological cures of cancer are usually a matter of evolution and not revolution. They come gradually and painstakingly, and not overnight. The American Cancer Society as well as the Cancer Commission deplors the needless raising of false hopes by premature publicity concerning new techniques or apparatus of any type. Physicians treating cancer by radiological methods will continue to place major dependence on competent radiologists using carefully calibrated x-ray and radium therapy apparatus.

(See also "Cobalt Bombs," *California Medicine*, 77:271, Oct. 1952.)

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In Memoriam

BOYD, EDWARD G. Died October 8, 1956, aged 80. Graduate of the Chicago College of Medicine and Surgery (P-M), 1908. Licensed in California in 1922. Doctor Boyd was a member of the Los Angeles County Medical Association.



CEFALU, VICTOR. Died in Burbank, November 7, 1956, aged 60, of cancer. Graduate of Tulane University School of Medicine, New Orleans, Louisiana, 1919. Licensed in California in 1930. Doctor Cefalu was a member of the Los Angeles County Medical Association.



DICK, ANDREW A. Died November 2, 1956, aged 53. Graduate of Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1926. Licensed in California in 1947. Doctor Dick was a member of the Los Angeles County Medical Association.



GERVIN, PETER ALPHONSE. Died in San Diego, September 25, 1956, aged 36. Graduate of Tufts Medical School, Boston, Massachusetts, 1946. Licensed in California in 1949. Doctor Gervin was a member of the San Diego County Medical Society.



GEYER, HARRY MAURICE, JR. Died October 17, 1956, aged 41. Graduate of the University of Pittsburgh, Pennsylvania, 1939. Licensed in California in 1949. Doctor Geyer was a member of the Kern County Medical Society.



GRIMMER, ELMO MILLER. Died in San Jose, October 11, 1956, aged 75. Graduate of Hahnemann Medical College of the Pacific, San Francisco, 1908. Licensed in California in 1909. Doctor Grimmer was a member of the Alameda-Contra Costa Medical Association.



HEIDENREICH, WILLIAM MILLER. Died in Arcadia, October 4, 1956, aged 64, of heart disease. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1930. Licensed in California in 1930. Doctor Heidenreich was a member of the Los Angeles County Medical Association.



HOCKENBEAMER, ERNEST PRYOR. Died in Gilroy, October 10, 1956, aged 47, of heart disease. Graduate of Northwestern University Medical School, Chicago, 1937. Licensed in California in 1937. Doctor Hockenbeamer was a member of the Santa Clara County Medical Society.

HOLZMAN, RALPH REUBEN. Died in Los Angeles, October 12, 1956, aged 56, of heart disease. Graduate of Northwestern University Medical School, Chicago, 1924. Licensed in California in 1924. Doctor Holzman was a member of the Los Angeles County Medical Association.



LINDQUIST, CHARLES A. Died in Shoshone, Idaho, October 31, 1956, aged 59, of heart disease. Graduate of Jefferson Medical College of Philadelphia, Pennsylvania, 1923. Licensed in California in 1926. Doctor Lindquist was a member of the Los Angeles County Medical Association.



MAETH, JOSEPH L. Died in Santa Monica, November 1, 1956, aged 54. Graduate of Washington University School of Medicine, St. Louis, Missouri, 1927. Licensed in California in 1938. Doctor Maeth was a member of the Los Angeles County Medical Association.



MANNY, MARY A. Died October 4, 1956, aged 63. Graduate of the Woman's Medical College of Pennsylvania, Philadelphia, 1927. Licensed in California in 1929. Doctor Manny was a member of the Los Angeles County Medical Association.



MORLEY, FRANCIS JOSEPH. Died in San Francisco, October 25, 1956, aged 57, of coronary artery disease. Graduate of the University of Colorado School of Medicine, Denver, 1927. Licensed in California in 1935. Doctor Morley was a member of the Alameda-Contra Costa Medical Association.



SNODDY, CARY A. Died in Vallejo, November 3, 1956, aged 79. Graduate of Vanderbilt University School of Medicine, Nashville, Tennessee, 1901. Licensed in California in 1919. Doctor Snoddy was a retired member of the Solano County Medical Society and the California Medical Association, and an associate member of the American Medical Association.



VAN ALLEN, LEW KNAPP. Died in Ukiah, October 8, 1956, aged 76, of cancer of the cecum. Graduate of Hahnemann Medical College of the Pacific, San Francisco, 1909. Licensed in California in 1909. Doctor Van Allen was a member of the Mendocino-Lake County Medical Society.



YOUNG, JAMES WATSON. Died in Los Angeles, October 15, 1956, aged 55. Graduate of the State University of Iowa College of Medicine, Iowa City, 1926. Licensed in California in 1927. Doctor Young was a member of the Los Angeles County Medical Association.

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Leaving (date).....Hour:.....A.M.....P.M. {6:00 P.M., unless otherwise notified

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names of both persons for each double room or twin bedded room requested. Names and addresses of all persons for whom you are requesting reservations and who will occupy the rooms asked for:

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Individual Requesting Reservations—Please print or type Delegate?..... Alternate?.....
Name..... County.....
Address..... City and State.....

NEWS & NOTES

NATIONAL • STATE • COUNTY

LOS ANGELES

At the November election in Los Angeles County a charter amendment was adopted which separated the **office of Coroner** from that of Public Administrator and required that the coroner be a certified pathologist. The office will in effect be like that of a medical examiner. The coroner will also have an appointment as professor of forensic pathology in the three medical schools in Los Angeles.

The proposal was adopted by a four to one majority. A record of the **materials utilized in this election** is to be preserved in the library of the Los Angeles County Medical County Association for use wherever needed for similar elections elsewhere, the association said.

* * *

General topics which are to be discussed in detail by a number of speakers at the seventeenth annual **Congress on Industrial Health** to be held February 4 to 6 in Los Angeles are as follows:

Vision in Industry: Part I, Monday, February 4, 2:00 p.m.; Part II, Tuesday, 9:00 a.m.

Health Hazards of Agricultural Chemicals: Tuesday, 2:00 p.m.

New Concepts in Management of Burns: Wednesday, 9:00 a.m.

New Developments in Hearing Loss Due to Industrial Noise: Wednesday, 2:00 p.m.

* * *

The period March 10 to 14 has been set for the 1957 **Alumni Postgraduate Convention** of the College of Medical Evangelists School of Medicine in Los Angeles.

Prefaced by two days of refresher courses, March 10 and 11, at the White Memorial Hospital on the C.M.E. Los Angeles campus, the three-day scientific assembly will include lectures, panels and scientific exhibits for visiting physicians. Designed primarily for general practitioners, the meeting is open to all physicians regardless of specialty or school affiliation.

* * *

Dr. Joseph F. Ross, professor of medicine and associate dean of the U.C.L.A. School of Medicine, has been named a member of the National Advisory Cancer Council by Surgeon General L. E. Burney of the U. S. Public Health Service of the Department of Health, Education, and Welfare. Dr. Ross will assist in formulating the National Advisory Cancer Council's recommendations to the Surgeon General regarding research activities of the National Cancer Institute.

MONTEREY

Dr. Alan Gregg of Big Sur was named one of this year's winners of the Albert Lasker Award, the American Public Health Association announced recently. A retired vice-president of the Rockefeller Foundation, Dr. Gregg was cited for 40 years of service in the fields of public health, medical education and research.

SAN FRANCISCO

Dr. David A. Wood, director of the Cancer Research Institute of the University of California Medical Center, San Francisco, was elected president of the American Cancer Society at its meeting in New York last month. Dr. Wood and **Dr. Ian Macdonald**, of Los Angeles, were reelected to the board of directors.

* * *

The election of **Dr. Francis L. Chamberlain**, San Francisco, to vice-presidency of the American Heart Association was announced at the recent annual meeting of the association in Chicago.

* * *

Under the sponsorship of Stanford University School of Medicine, **David McK. Rioch, M.D.**, Director, Division of Neuropsychiatry at Walter Reed Hospital, Washington, D. C., will present the **Jake Gimbel Lectures on Sex Psychology** at 8:15 p.m., January 14, 16 and 17, in Lane Hall, 2398 Sacramento Street. Dr. Rioch also will present two lectures at Stanford University, one the evening of January 15 and one the afternoon of January 17. Members of the medical profession, including practitioners and medical students, and other interested persons are cordially invited to attend.

* * *

At the annual dinner meeting of the San Francisco chapter of the **Pan American Medical Association** honoring the local consular representatives and foreign interns, residents and fellows, the following physicians were elected to office for 1957: **Leonard B. Barnard**, president; **Knox H. Finley**, first vice-president; **Fernando G. Gomez**, second vice-president; **Harold I. Harvey**, treasurer; and **Paul G. Fuerstner**, secretary. Elected regional administrators were **Ray C. Atkinson**, **Suren H. Babington**, **Edward W. Beach**, **Charles C. Falk, Jr.**, **Marius A. Francoz**, **Berthel H. Henning**, **J. Sarraill**, **J. Randolph Sharpsteen** and **Charles P. Mathé**, chairman.

GENERAL

Mr. John Hunton, executive secretary of the California Medical Association, recently accepted appointment to a committee of three medical society executives which acts in an advisory capacity to the National Disease and Therapeutic Index, a service of Taylor, Harkins and Lea, of Philadelphia, designed to provide continuous statistical information for study of the reasons why patients see doctors and the types of treatment they receive.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education assemblies and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: **Mrs. Margaret H. Griffith**, Director, Postgraduate Activities, California Medical Association, 417 South Hill Street, Los Angeles 13.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Medical Technicians Refresher Course. Thursdays, January 10 through April 18, 1957. Thirty hours. Fee: \$30.00.

Disorders of Fluid and Electrolyte Metabolism, Etiology and Management. Tuesdays, February 5 through March 26, 1957. Sixteen hours. Fee: \$40.00.

Fractures. Tuesdays, February 19 through March 26, 1957. Twelve hours. Fee: \$30.00.

Sterility. Thursdays, March 7 through April 25, 1957. Sixteen hours plus four 2-hour clinics.*

Six Half-day Symposia. Every other Wednesday, March 6 through May 15, 1957. Twelve hours.*

Contact: Thomas H. Sternberg, M.D., Assistant Dean for Postgraduate Medical Education, U.C.L.A., Los Angeles 24. BRadshaw 2-8911, Ext. 202.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Dynamic Concepts in Medical Practice. Thursday, Friday and Saturday, January 10 to 12, 1957. Eighteen hours. Fee: \$50.00.

Postgraduate Conference Clinics in Dermatology. January 11 and 12, 1957. Fourteen hours.*

Iron in Clinical Medicine (International Symposium). January 28 and 29, 1957. Sixteen hours.*

Course for General Practitioners. Monday through Friday, March 4 to 8, Mount Zion Hospital. Thirty hours.*

Fundamental Principles of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Tuition: \$250.00 per month.

Contact: Seymour M. Farber, M.D., Head, Postgraduate Instruction, Office of Medical Extension, University of California Medical Center, San Francisco 22. MONTrose 4-3600, Ext. 665.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Home Course in Electrocardiography. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: \$100.00.

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. Residents admitted without fee. Tuition for all other physicians: \$30.00. (Each session all-inclusive.)

Conferences and Live Clinics in Diseases of the Liver and Biliary Tract. All day, each day, Friday, Saturday and Sunday, March 22, 23, and 24, 1957. Hotel Statler and Los Angeles County Hospital. Fee: \$65.00.

Contact: Phil R. Manning, M.D., Director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

Surgical Anatomy: Dissection, Demonstration and Lectures, Thorax, Abdomen and Pelvis. Mondays and Wednesdays, January 14 through April 17, 1957. 104 hours.

Varicose Veins, the Peripheral System. Tuesdays, January 15 through February 26, 1957. Fourteen hours.

Surgical Anatomy: Demonstration and Lectures, Thorax, Abdomen and Pelvis. Wednesdays, January 16 through April 17, 1957. Twenty-six hours.

* Fees to be announced.

Management of Infertility. Thursdays, January 17 through March 7, 1957. Twelve hours.

Operative Surgery. Wednesdays, March 20 through June 5, 1957. Thirty hours.

Gynecology. Wednesdays, March 27 through May 29, 1957. Ten hours.

Thoracic Surgery. Wednesdays, April 24 through May 15, 1957. Eight hours.

Contact: Chairman, Section on Graduate and Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANGelus 9-9131, Ext. 205.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE COURSES

AUDIO DIGEST FOUNDATION, a nonprofit subsidiary of the C.M.A., now offers (on a subscription basis) a series of hour-long tape recordings designed to keep the physician abreast of current happenings in his particular field. Composed of practice-useful abstracts from 600 leading journals, with short lectures and editorial comments from prominent physicians, Audio Digest offers programs covering general practice, surgery, internal medicine, obstetrics and gynecology, and pediatrics.

Contact: Claron L. Oakley, editor, 6767 Sunset Blvd., Hollywood 28, Calif.

WEST COAST CIRCUIT in cooperation with University of Southern California School of Medicine:

San Luis Obispo—Mondays, February 18, 25, March 4, 11, 1957.

Santa Maria—Tuesdays, February 19, 26, March 5, 12, 1957.

Santa Barbara—Wednesdays, February 20, 27, March 6, 13, 1957.

POSTGRADUATE INSTITUTES, 1957

SOUTHERN COUNTIES (Riverside, Orange and San Bernardino) in cooperation with University of California, Los Angeles, February 14 to 15, 1957, Disneyland Hotel, Anaheim. Chairman: H. C. Barron, M.D., 4030 Eighth Street, Riverside.

WEST COAST COUNTIES in cooperation with University of Southern California, March 7 to 8, 1957, Golden Bough Theater and La Playa Hotel, Carmel. Chairman: Edwin W. Tucker, M.D., 1073 Cass Street, Monterey.

SAN JOAQUIN COUNTIES in cooperation with University of California, San Francisco, March 21 to 22, Hotel Californian, Fresno. Chairman: Richard H. Whitten, M.D., 2912 Fresno Street, Fresno.

NORTH COAST COUNTIES in cooperation with Stanford University, April 11 to 12, 1957, Odd Fellows Hall, Santa Rosa. Chairman: Robert S. Quinn, M.D., 185 Sotoyome Avenue, Santa Rosa.

SACRAMENTO VALLEY COUNTIES in cooperation with College of Medical Evangelists, June 20 to 21, 1957, Tahoe Tavern, Lake Tahoe. Chairman: C. M. Blumenfeld, M.D., 4700 Parkridge Road, Sacramento.

Contact: One of the chairmen listed above, or Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 417 So. Hill Street, Los Angeles 13. Madison 6-0683.

Medical Dates Bulletin

JANUARY MEETINGS

AMERICAN BOARD OF SURGERY examination, Part II, Los Angeles, January 14 and 15; San Francisco, January 17 and 18.

SOUTHERN CALIFORNIA CHAPTER, AMERICAN COLLEGE OF SURGEONS, Biltmore Hotel, Santa Barbara, January 18, 19, and 20. *Contact:* Max R. Gaspar, M.D., Secretary-Treasurer, 211 Cherry Avenue, Long Beach 2.

CALIFORNIA RURAL HEALTH COUNCIL Third Annual Conference on Rural Health, January 25 and 26, Hotel Senator, Sacramento. *Contact:* Glenn Gillette, associate director, Public Relations, California Medical Association, 450 Sutter Street, San Francisco.

AMERICAN FEDERATION FOR CLINICAL RESEARCH, Wednesday afternoon and Thursday morning, January 30 to 31, Golden Bough Theater and La Playa Hotel, Carmel.†

WESTERN ASSOCIATION OF PHYSICIANS, Wednesday morning and Friday afternoon, January 30 and February 1, Golden Bough Theater, La Playa Hotel, Carmel.†

WESTERN SOCIETY FOR CLINICAL RESEARCH, Wednesday afternoon, Thursday and Friday mornings, Golden Bough Theater and La Playa Hotel, Carmel.†

Section on Diseases of the Chest, LOS ANGELES COUNTY MEDICAL ASSOCIATION and LOS ANGELES COUNTY TUBERCULOSIS and HEALTH ASSOCIATION Sixth Biennial Postgraduate Course on Diseases of the Chest, All day each day January 31 to February 2 at Los Angeles County Medical Association, 1925 Wilshire Blvd., Los Angeles. *Contact:* David Salkin, M.D., Veterans' Hospital, San Fernando.

FEBRUARY MEETINGS

CONGRESS ON INDUSTRIAL HEALTH, A.M.A. Council on Industrial Health, Biltmore Hotel, Los Angeles, February 3 to 6. *Contact:* American Medical Association, 535 North Dearborn St., Chicago 10.

AMERICAN COLLEGE OF CHEST PHYSICIANS Postgraduate Course on Diseases of the Chest, February 25 through March 1, 9 a.m.-5 p.m., Mark Hopkins Hotel, San Francisco. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11.

MARCH MEETINGS

MEDICAL ADVISORY BOARD, UNITED CEREBRAL PALSY ASSOCIATION all day Symposium on Cerebral Palsy, San Francisco, March 2. Guest speaker: Dr. Samuel P. Hicks, Pathologist, Harvard Medical School. *Contact:* Mrs. Marjorie E. Brush, executive director, 47 Kearny St., San Francisco 8 or phone EXbrook 2-1862.

SOCIETY OF GRADUATE SURGEONS OF LOS ANGELES COUNTY HOSPITAL SURGICAL FORUM, March 4 to 8, Ambassador Hotel, Los Angeles. *Contact:* Wm. F. Roe, M.D., 14431 Hamlin St., Van Nuys, Calif.

COLLEGE OF MEDICAL EVANGELISTS SCHOOL OF MEDICINE Annual Alumni Postgraduate Convention. Refresher courses, White Memorial Hospital, March 10 and 11; Scientific Assembly, Biltmore Hotel, March 12 to 14, both in Los Angeles. *Contact:* Walter B. Crawford, managing director, Alumni Postgraduate Convention, 316 N. Bailey St., Los Angeles 33, or telephone: ANgelus 2-2173.

† For information *contact:* Joseph Ross, M.D., associate dean, UCLA Medical Center, Los Angeles 24.

APRIL MEETINGS

REGIONAL MEETING INTERNATIONAL COLLEGE OF SURGEONS, Santa Barbara, California, April 1 to 2. *Contact:* Ross V. Parks, M.D., 1930 Wilshire Blvd., Los Angeles 57.

LETTERMAN ARMY HOSPITAL "Surgery in Acute Trauma," 8 a.m. to 4:30 p.m., April 1 to 3.†

CALIFORNIA SOCIETY OF ANESTHESIOLOGISTS, INC., Annual Meeting, Sun Valley, Idaho, April 9th. *Contact:* Francis E. Guinney, M.D., secretary, 2790 Monte Mar Terrace, Los Angeles 64.

UNITED STATES-MEXICO BORDER PUBLIC HEALTH ASSOCIATION Fifteenth Annual Meeting, April 9 to 12, San Antonio, Texas. *Contact:* Donald G. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley.

VALLEY CHILDREN'S HOSPITAL Spring Clinics, Roosevelt High Auditorium, Fresno. *Contact:* Valley Children's Hospital, Millbrook and Shields Avenue, Fresno.

LETTERMAN ARMY HOSPITAL "Oral Surgery," 8 a.m. to 4:30 p.m., April 22 to 26.†

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles, April 28 to May 1. *Contact:* John Hunton, executive secretary, 450 Sutter St., San Francisco 8, or Ed Clancy, director of Public Relations, 417 S. Hill St., Los Angeles 13.

SUMMER AND FALL MEETINGS, 1957

CALIFORNIA HEART ASSOCIATION Annual Meeting Lafayette Hotel, San Diego, May 17, 18, and 19. *Contact:* J. Keith Thwaites, executive director, California Heart Association, 1428 Bush Street, San Francisco.

WESTERN BRANCH, AMERICAN PUBLIC HEALTH ASSOCIATION annual meeting, Lafayette Hotel, Long Beach, May 29 and June 1. *Contact:* Mrs. L. Amy Darter, Secretary-Treasurer, State Dept. Public Health, 2151 Berkeley Way, Berkeley.

CHILDREN'S HOSPITAL OF THE EAST BAY Pediatric Seminar and Clifford Sweet Lectures, June 7 to 8. Guest lecturer: Sydney S. Gellis, M.D., Boston. *Contact:* James Dennis, M.D., medical director, 5105 Dover St., Oakland 9.

IDAHO STATE MEDICAL ASSOCIATION 65th Annual Meeting, Sun Valley, June 16 to 19. *Contact:* Mr. Armand L. Bird, executive secretary, 364 Sonna Bldg., Boise, Idaho.

WYOMING STATE MEDICAL SOCIETY ROCKY MOUNTAIN MEDICAL CONFERENCE Annual Joint Meeting, Jackson Lake Lodge, Moran, Wyoming, June 16 to 19. *Contact:* H. L. Harvey, M.D., Casper, Wyoming.

WASHINGTON STATE MEDICAL ASSOCIATION Annual Meeting, Olympic Hotel, Seattle, Washington, September 15 to 18. *Contact:* Mr. Ralph W. Neill, executive secretary, 1309 Seventh Ave., Seattle, Washington.

SAN FRANCISCO HEART ASSOCIATION 28th Annual Postgraduate Symposium on Heart Disease, October 2 to 4, St. Francis Hotel, San Francisco. *Contact:* Lawrence I. Kramer, Jr., executive director, 604 Mission St., San Francisco.

CALIFORNIA SOCIETY OF INTERNAL MEDICINE Annual Meeting, October 25 to 27, El Mirador, Palm Springs. *Contact:* Mrs. Mildred B. Coleman, assistant secretary, 350 Post St., San Francisco 8.

† *Contact:* Major Max E. Knickerbocker, MSC, Chief of Education and Training Branch, Letterman Army Hospital, San Francisco.

INFORMATION

Medical Care for Military Dependents*

ON DECEMBER 8 the Defense Department and the Department of Health, Education, and Welfare put into effect an extensive federally sponsored medical care program. It is Medicare—Military Dependent Medical Care. Not only will military families be covered, but benefits will go to all “uniformed” service families as well—U. S. Public Health Service, Coast and Geodetic Survey and the Coast Guard. The medical profession obviously is concerned with how the program will be set up in each state and how it will be operated once it gets under way. Preparing the ground for this new program has not been a simple task. Under the law benefits are not exactly the same in military and in private facilities; outpatient care is allowed in military but not in private hospitals; there are dollar limits on some of the benefits and service limits on others; wives and children, but not parents and parents-in-law, have a right to civilian care; virtually complete care is offered in maternity cases, but only emergency and temporary care for certain types of illness. This report is a condensation of the lengthy and necessarily detailed Joint Directive drawn up by Departments of Defense and Health, Education, and Welfare for implementing the act. It is designed to supply some of the information you will need to understand this newest federal medical program. (For purposes of this report, the designations “military,” “uniformed,” or “service” include U. S. Public Health Service as well as Army, Navy and Air Force.)

THOSE ELIGIBLE FOR MEDICAL CARE UNDER NEW PROGRAM

Dependents of: (a) Members of the uniformed service, (b) retired members, and (c) persons who died while a member or retired member are entitled by law to medical care under the new act going into effect December 7. The uniformed services are the Army, Navy, Air Force, Marine Corps, Coast Guard, Commissioned Corps of the Coast and Geodetic Survey and Commissioned Corps of the U. S. Public Health Service. However, all dependents are not entitled to civilian care.

Care from civilian as well as military sources is authorized only for spouses and dependent children

of persons on active duty (but only if duty orders are for more than 30 days). Care in military facilities only is authorized for unremarried widow, unremarried widower and children of deceased or retired member if dependent at time of spouse's death and for parents or parents-in-law if receiving half cost of support from member at time of member's death.

Note: Furnishing of medical care to dependents not to interfere with primary mission of military facilities, and commanding officer of facility has conclusive determination as to the availability of space and capabilities of medical staff to care for dependents.

EXTENT OF MEDICAL CARE TO WHICH DEPENDENTS ARE ENTITLED

In military facilities, medical care limited to the following: Diagnosis, treatment of acute medical conditions, including acute phases of chronic diseases; surgical conditions; contagious diseases; immunization; obstetrical and infant care; other acute emergencies (temporary treatment); dental care only to relieve pain and suffering or as a necessary adjunct to medical or surgical treatment, or in U. S. where adequate civilian dental facilities are not available.

Medical care not authorized in military facilities for the following: Chronic diseases; nervous and mental disorders; elective medical and surgical treatment, such as cosmetic surgery; domiciliary care; prosthesis, except that overseas and in remote places in U. S. these items may be supplied at cost; ambulance service except in emergencies; home calls (except if determined to be medically necessary); dental care except as noted above. (Exceptions allowed in special and unusual cases.)

In civilian facilities, medical care limited to the following: Acute medical conditions, including acute phases of chronic diseases; surgical conditions; contagious diseases while in hospital; complete obstetrical and maternity care; 365 days' hospitalization (semiprivate accommodations) for each admission, including all necessary services and supplies by hospital; prehospitalization and posthospitalization services of doctor for bodily injury or surgical operation, including certain tests; acute emergencies of any nature if threat to life, health or well-being, including temporary treatment of acute emotional disorders; diagnostic tests and procedures during hospitalization.

Payment by the government also is authorized for treatment of certain bodily injuries and a limited number of tests in connection with them when there is no hospitalization. Specifically, payment is authorized for diagnostic tests and procedures for

*From a special report (#84-28) of the A.M.A. Washington office.

treatment of fractures, dislocations, lacerations and other wounds as prescribed in local schedule of allowances. In such cases when patient is not hospitalized maximum government payment authorized is \$75 for laboratory tests, pathology and radiology examinations. Use of hospital outpatient facilities, such as cast room, for treatment of injury also is authorized.

Medical care not authorized in civilian facilities for chronic diseases (except acute exacerbations and complications); nervous and mental disorders; elective medical and surgical treatment; domiciliary care; treatments or procedures normally considered to be outpatient care. (Exceptions allowed in special and unusual cases.)

Note: While hospitalization in civilian facilities is limited to 365 days, dependents requiring hospitalization beyond this time will be transferred to service hospitals or the government may authorize pay for their continued care in the private hospital. Payment for drugs and materials outside hospital not authorized, except those dispensed by physician to patients in his office in connection with treatment of injury.

LIMITATION ON CHOICE OF FACILITY BY DEPENDENTS

At the outset of the program, spouses and children of active duty members (the only dependents eligible for both civilian and military care) will have free choice between civilian and military. However, this limitation can be invoked later: If it is shown that use of civilian medical facilities by dependents in a certain area has affected adversely the optimum economic utilization of service facilities, the Secretary of Defense (or of HEW) may restrict dependents in that area to care in a service facility. In defining such areas, the secretary must take into consideration normal commuting time, distance and unusual geographic and transportation factors. Wherever imposed, this restriction on freedom of choice may be waived in an emergency, and under any circumstances spouses and children of active duty members will retain freedom of choice between service and private facilities if they are not living with the service person on whom they are dependent.

IDENTIFICATION OF DEPENDENTS AND THEIR ADMISSION TO BENEFITS

Dependents will be identified by a "Dependents' Authorization for Medical Care" card (DD Form 1173, one card to a family). In addition to identifying the individual dependents, it also will indicate whether they are entitled to both civilian or military care or only to military care on a "space available" basis. These cards will have to be in use no

later than July 1, 1957. Until the new system is in effect, the services may continue to use existing procedures for identifying dependents.

Note: Doctors and hospitals are expected to use "reasonable care and precaution" in identifying dependents. However, when care is furnished in good faith and subsequently it is determined that the dependent is not entitled to such care at government expense, any action for recovery instituted by the government will be against the dependent or his sponsor, and not against the doctor or the hospital.

CHARGES AGAINST DEPENDENT FOR MEDICAL CARE

In military facilities, the charge against dependents will be \$1.75 per day for inpatient care, including cost of subsistence. As a restraint on excessive demands for outpatient care, the Secretary of Defense, on recommendation of the secretary of a service, may set uniform minimal charges for outpatient care.

In civilian facilities, the dependents will pay the first \$25 of expense incurred, or \$1.75 per day, whichever total is the larger, payment to be made to the hospital. If the physician decides a private room or private-duty nursing care is required, a portion of the cost will be assessed against the dependent. In the case of treatment outside hospital for an injury, the patient is to pay the physician the first \$15 of costs, with the government paying the remainder as authorized by local fee schedules.

ADMINISTRATION FROM FEDERAL LEVEL AND CONTRACT-MAKING

Secretary of Defense has jurisdiction over Army, Navy, Air Force, Marine Corps and Coast Guard when operating with Navy; Secretary of Health, Education, and Welfare has jurisdiction over Public Health Service and for medical care purposes over Coast and Geodetic Survey, and the Coast Guard when not with Navy.

In contracting for medical care, the Army is executive agent for all services in U. S., Alaska, Hawaii and Puerto Rico. The Army is now arranging contracts to cover the following: Fees to be paid for physicians and surgeons; provision for review; administrative responsibility of contractors and methods for determining administrative costs; billing arrangements for medical care costs; liaison with contractor, development of budgetary information; processing of complaints with reference to civilian medical care and hospitalization.

Contractors (representing physicians in each state) to have responsibility for resolving medical disputes through grievance committees composed of civilian physicians; and Army's responsibility does

not include a detailed supervision of civilian medical procedures or a detailed inspection of civilian medical facilities. Outside continental U. S., in areas where facilities of the uniformed services cannot provide adequate care for spouses and dependent children, medical care to be provided for them "from acceptable local sources," with each service making its own arrangements.

Eligible dependents, regardless of the service affiliation of their sponsor, are to be given equal opportunity of medical care in any service hospital. Hospital commanders are to establish coordination with each other and with representatives of the local medical society and civilian hospitals "for the smooth referral of excess dependent patient loads to civilian medical facilities."

Note: The Army currently is prepared to enter into medical care agreements with the states, dealing with negotiating and fiscal contractors recommended by state medical societies. The fiscal or disbursing contractor might be the state society, Blue Shield or an insurance company.

PHYSICIANS' SERVICES; LIMITATIONS, PAYMENT OF FEES

In services related to hospitalization, fees to be based on approved local schedule of allowances, including fees of consultants' services which are to be certified as required by attending physician.

Approved local schedule of allowances for hospital treatment for bodily injury or surgical procedure to include prehospitization care and normal after-care following hospitalization.

In addition: Payment is authorized for necessary diagnostic tests and procedures performed or authorized by the attending physician prior to hospitalization or for proper after-care of the same bodily injury or surgical procedure for which hospitalized but not to exceed a maximum of \$75 total charges for prehospitization diagnostic tests and procedures and a maximum of \$50 total charges for posthospitalization tests and procedures.

Note: The monetary limitations noted above (\$75 and \$50) define the government's total liability, and in no way affect fees for individual procedures contained in the local schedules of allowances. Also, mechanism is provided for payment by the government in excess of these fees "in special and extraordinary cases."

Complete maternity services include prenatal care, delivery and postnatal care in hospital, office or home, payment to be made to physician on local schedule of allowances.

Also authorized are allowances for (a) laboratory tests, pathology or radiology examinations and other procedures performed or authorized by the attending physician, (b) consultant's fee if certified as required by the attending physician, and (c) newborn infant care (including immunization) outside hospital for up to 60 days, but not to exceed two visits to or by physician following discharge.

This report covers the basic points of the program. Later more information will be supplied to the medical profession by the American Medical Association, State Medical Societies and the Department of Defense.





THE PHYSICIAN'S *Bookshelf*

ARTHRITIS AND COMMON SENSE—Dan Dale Alexander. Statement* by the American Rheumatism Association.†

The term "arthritis" is a symptom common to many diseases which afflict the human body. The two most prevalent forms of arthritis are completely independent and diverse entities.

Osteoarthritis, or degenerative joint disease, occurs in the process of aging, and is produced in a large measure by wear and tear.

Rheumatoid arthritis is an inflammatory disease of the joints which leads to deformity and severe crippling. Its cause is unknown, and the disease is difficult to treat successfully by any type of medication.

Other forms include arthritis due to specific infections, rheumatic fever, gout and a group of diseases known as collagen diseases, including lupus erythematosus, which is frequently fatal.

There is no evidence that any form of arthritis, with the exception of gout, is related in any way to diet. Gout is caused by a disturbance of uric acid metabolism. In some cases, successful treatment may require the elimination of meat and certain foods with high purine content.

Certainly scientific investigation—which is being conducted in laboratories and hospitals throughout the world—has failed to justify the belief that either osteoarthritis or rheumatoid arthritis is caused by any special dietary deficiency or lack of vitamins.

In addition, the joints of the human body are not lubricated by an oil or fat. Nor do the lubricating substances in the joints have any relationship to foods containing oils or fats, to codliver oil or to such vitamins as vitamin D.

Furthermore, evidence today points to the fact that the adrenal steroids, such as cortisone and hydrocortisone, are produced from very simple substances. Vitamin D plays no part in their production.

Certainly there is no evidence that drinking water can make arthritis worse, or have any effect whatsoever upon arthritis, with the exception of gout. For those who have gout, a good fluid intake, including water, is most important.

As far as the cortisone produced by the adrenal glands of arthritic patients being different from that of normal people is concerned, the effective, naturally occurring hormone from the adrenal cortex in the human would seem to be hydrocortisone. There is no good evidence at the present time that there is any abnormality in the adrenal steroids of arthritic patients as opposed to normal. There is certainly no special type of cortisone produced in the arthritic patient.

The author's statements regarding some of the symptoms that indicate arthritis, or a tendency to arthritis, are not based on scientific fact. Dryness of scalp, skin, ears; brittle-

ness of the nails; lack of elasticity of the skin; premature greying of the hair; itching of nose or rectum; buzzing in the ears; sterility; varicose veins; marking of the teeth or bleeding of the gums; and tingling of the extremities are not caused by arthritis, nor do they indicate that one is susceptible to arthritis.

Arthritis in all forms is difficult to treat under the most favorable conditions. The problem becomes even more complicated when its investigation and treatment are confused in the minds of the public by misleading fads and fancies.

Although the author claims that many people have written him stating that they have been "cured" of their arthritis by following his recommendations, such statements must be carefully examined.

In the first place, many so-called arthritis victims are actually victims of self-diagnosis. All bodily aches and pains are not arthritis, nor in many cases are diagnoses by physicians of arthritis absolutely accurate. Only recently has a committee of the American Rheumatism Association succeeded in establishing basic criteria by which a diagnosis of rheumatoid arthritis can be considered reasonably accurate. Also recently certain blood tests have proved effective in making a positive diagnosis.

In the second place, rheumatoid arthritis is a disease which has dormant periods. There is no known cure for it at present and the newer drugs and methods of treatment may only be said to arrest the disease. In some cases, the acute phase may arrest itself and a patient may consider himself or herself "cured," only to be stricken at a much later date with a recurrence of the ailment. In other cases the disease may "burn itself out," leaving the patient crippled, but free from pain.

In other words, there is no set clinical course for rheumatoid arthritis; it may persist unabated for many years, or it may slowly subside anytime after a few months; and in most instances it repeatedly flares up even after a number of years of quiescence.

Finally, in arthritis, as in many other diseases, the mental attitude of a patient can affect the degree of apparent acuteness. If a patient believes a certain course of treatment will help, there may be a period of comparative well-being. Unfortunately, in the case of arthritis, such sense of relief is not permanent.

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ESSENTIAL UROLOGY—Third Edition—Fletcher H. Colby, M.D., Consultant, Massachusetts General Hospital; formerly Associate Clinical Professor of Genito-Urinary Surgery, Harvard Medical School. The Williams and Wilkins Company, Baltimore, 1956. 656 pages, \$8.00.

This is a new edition of the very popular textbook on urology by the former chief of the Urological Service of the Massachusetts General Hospital and Associate Clinical Professor of Genito-Urinary Surgery, Harvard Medical School. Both of the former editions were reprinted, and this Third Edition marks the sixth printing since the book originally

*Prepared in August, 1956.

†The American Rheumatism Association is a professional organization composed of more than 1,000 physicians throughout the country, with a special interest in the treatment of arthritis and the rheumatic diseases.

appeared in 1950. This fact alone would seem to be ample evidence of the quality of the work and of how highly the book has been regarded.

Essential Urology is not primarily for the specialist, but it is a very adequate text for the student, and is in general superior to most of those that have appeared in the last few years. It is also a valuable reference book for the practicing physician and may even be used to considerable advantage by the specialist in urology. The new edition has further expanded the sections on treatment, a minor defect of the first edition, and contains a rather comprehensive discussion of the antibiotics and chemotherapeutic agents used in the treatment of urinary infections.

The book naturally reflects the long association of the author with the Massachusetts General Hospital and Harvard Medical School. This is well shown in the section on the etiology and management of urinary calculi, as well as in the considerations of urinary neoplasms and tuberculosis, both of which are very excellent and include the latest thinking of the profession. Even more important for the average doctor there is at least some discussion of almost all of those minor diseases that make up such a large part of the average urological practice.

The entire volume is well written and organized for easy reading. The plates are numerous, excellently reproduced, and well chosen. Altogether this reviewer feels that this is the best small textbook on urology available and recommends it highly. Moreover the book will make a valuable addition to the library of every physician even mildly interested in diseases of the urinary tract.

* * *

CLINICAL UROLOGY FOR GENERAL PRACTICE—Justin J. Cordonnier, M.D., F.A.C.S., Professor of Urology, Washington University School of Medicine, St. Louis. The C. V. Mosby Company, St. Louis, 1956. 252 pages, \$6.75.

This is another small textbook on urology, several of which have appeared recently, all directed primarily to the medical student and the general practitioner of medicine. The author is Professor of Urology at Washington University Medical School, St. Louis, and is quite well known to the profession, especially for his work on diversion of the urinary tract in connection with cystectomy for cancer. The material used in the book is, as usual, an expansion of the author's lectures to medical students, with the addition of numerous excellent plates and illustrations.

The format of the book is excellent, but it shares with the other books of its type the defect of a considerable degree of oversimplification. To cover within less than 200 pages of text, plus some 60 pages of illustrations, the field of urology must necessarily require a degree of abridgement inconsistent with any very adequate consideration of the subject. However, the author does discuss rather satisfactorily most of the common pathological conditions of the urinary tract, including even the neurological dysfunctions, sexual deficiencies, and a short chapter on acute and chronic renal failure.

One valuable feature of the book is a relatively unbiased description of the perennial problems of the urologist—the management and proper surgical approach to the enlarged prostate, the limitations of hormonal and radical treatment of carcinoma of the prostate, the advantages and disadvantages of the various suggested methods of urinary diversion in the radical treatment of cancer of the bladder, and numerous practical suggestions in the treatment of the more ordinary urinary diseases. Every doctor can read with profit the chapter on Female Urology, and even the well trained urologist will find valuable suggestions throughout the book.

The author will find many friends disagreeing with some of his pronouncements. His suggestion that in general trans-

urethral resection of the prostate is suitable only for glands not more than 40 to 50 grams in weight will arouse a few screams of anguish from the more rabid advocates of the procedure. The followers of Terence Millin will not agree with his rather lukewarm acceptance of the retropubic operation. For the extraction of stones in the lower ureter he advises the looped catheter and mentions the wire basket only to condemn it. Sulfadiazine appears to be his sulfonamide of choice, which is probably not the latest thinking on the subject. Other examples might be cited.

However, on the whole this book is one of the best in its class, and the student will gain from it a well-balanced view of the field of urology. But even more the general practitioner and the specialist will find here many helpful and practical suggestions for the handling of their urological problems, including advice on both what to do and what not to do. The book is recommended.

* * *

CLINICAL UROLOGY—Third Edition—Volumes I and II—Oswald Swinney Lowsley, A.B., M.D., F.A.C.S., F.I.C.S., First Director Department of Urology, New York Hospital; and Thomas Joseph Kirwin, M.A., M.S., M.D., F.A.C.S., F.I.C.S., Professor of Urology, New York Medical College. The Williams and Wilkins Company, Baltimore, 1956. 985 pages, fourteen pages of index, 599 figures, \$32.50.

Few specialties have participated in such phenomenal advances as has urology during the past decade. These advances are well documented in the third edition of Clinical Urology by Doctors Lowsley and Kirwin. Particularly informative are the revised sections on cancer of the prostate gland, retropubic prostatectomy, methods of diverting the urinary stream, and the treatment of anuria.

The new edition is beautifully published on an enlarged, three-column format which provides easier readability. Many new illustrations have been added to bring the present total to 599.

Although these volumes are too detailed for a student's manual and not sufficiently comprehensive for a complete reference text, they serve a useful purpose in presenting an excellent exposition of the authors' methods of treatment, especially in the field of urologic surgery. Their specialized techniques, clearly shown in step-by-step illustrations by William P. Didusch, make the volumes an invaluable atlas of surgical urology.

Residents in surgery and urology and urologic surgeons will find the volumes extremely helpful as a specialized reference text. They should be in the library of every urologist.

This excellent edition is a fitting monument to the life work of Dr. Oswald Lowsley who was a co-author of Clinical Urology from its beginning, and who died shortly before its publication.

* * *

AN ATLAS OF REGIONAL DERMATOLOGY—G. H. Percival, M.D., Ph.D., F.R.C.P.E., D.P.H., Grant Professor of Dermatology; and T. C. Dodds, F.I.M.L.T., F.I.B.P., F.R.P.S., Laboratory Supervisor, Department of Pathology, both from the University of Edinburgh. The Williams and Wilkins Company, Baltimore, 1955. 264 pages, 475 figures in full color, \$19.00.

The authors present 475 photographs of the most common cutaneous disorders. Also presented, but in lesser numbers, are photographs of the less common skin diseases. The texture of the paper is excellent and the detail in the photographs is well demonstrated. Most of the photographs have brief, pertinent subtitles. The photographs are presented in two perspectives: (1) According to distribution and (2) according to diseases having similar appearing lesions.

The book should prove to be a great aid to those beginning in dermatology and also of much help to those already in the field.

INTERNAL SECRETIONS OF THE PANCREAS—Ciba Foundation Colloquia on Endocrinology, G. E. W. Wolstenholme, O.B.E., M.A., M.B., B. Ch., Editor, and Cecilia M. O'Connor, B. Sc., Little, Brown and Company, Boston, 1956. 292 pages, 100 illustrations, \$7.00.

This book is based upon a symposium on "The Nature and Actions of the Internal Secretions of the Pancreas" which was held in London, England, from the 21st to the 23rd of June 1955. It is truly an international collection of famous names in chemistry, physics and the biological sciences.

The subject material in general consists of fundamental research such as reports on the destruction of pancreas cells by chemical means, and the metabolic effects so produced. Several chapters are devoted to very technical discussions on fractionation of insulin, the chemical structure and the three dimensional structure of insulin. Metabolic effects of insulin are presented such as the effect upon the permeability of tissue cells to sugars, effect on transport of sugars, and hepatic action.

An excellent review and discussion, as well as original work on glucagon is presented, including its chemical and biological characteristics and metabolic effects. It is work such as this which may lead to eventual improvement in the treatment of diabetes and other disturbances of carbohydrate metabolism.

This book is not for the general practitioner or general internist. It is very valuable for those who are doing basic research on the pancreas and for those who are doing clinical research in this field. The chapters on glucagon are stimulating and give rise to new avenues for clinical investigation.

* * *

A MANUAL OF PRACTICAL OBSTETRICS—Third Edition—The Late O'Donel Browne, M.B., M.A.O., M.A., Litt.D., F.R.C.P.I., F.R.C.O.G., Master, Rotunda Hospital, Dublin—Edited and Largely Rewritten by J. G. Gallagher, M.D., M.A.O., F.R.C.P.I., M.R.C.O.G. John Wright and Sons, Ltd., Bristol, Distributed in U. S. A. by Williams and Wilkins Co., Baltimore 2, Maryland, 1956. 265 pages, \$7.50.

This book was clearly written for the general practitioner. While it has the virtue of brevity I hardly think that it would be suitable for students since the discussion of the various subjects does not contain enough background to invite association and memory. Even for the American practitioner I would doubt that it would have great appeal since much of it has a distinctly foreign flavor. For example, in the treatment of various conditions, pharmaceutical preparations of one sort and another are referred to by their trade names which are wholly unintelligible to us. Again, the events of normal delivery are described with the patient lying on her side, a method of delivery which is totally foreign to us. The viewpoints expressed are related to home deliveries, though the discussion follows through to the hospital wherever appropriate.

There is a conventional coverage of the subject matter of obstetrics though the accents are placed differently from those of American texts. Rather scant consideration is given to the effects of pregnancy upon the maternal organism and upon the effects of diseases upon the pregnant woman. A list of the "General Diseases in Pregnancy" might be of interest: Cardiac (one page), gonorrhea, appendicitis, phthisis, pyelitis, anemia ("Severe anemias with hemoglobin percentages of 20-30 are common in Ireland"), glycosuria, retroverted gravid uterus, incarceration of retroverted gravid uterus (several pages are devoted to these last two subjects), ovarian cysts and fibroids, pseudocystis.

There are excellent descriptions of the events and management of labor associated with the various presentations and positions of the fetus. Particularly good is a description

of vaginal examination in labor, how it is to be done and what is to be expected from it.

Evidently episiotomies are not recommended in Ireland except in connection with operative delivery, and so there is a prolonged consideration of perineal lacerations and their repair. Silk worm gut is advised for the repair of such tears.

Demerol and scopolamine are preferred for analgesia, while chloroform seems to be favored for delivery. Pudendal block, spinal and caudal anesthesia are regarded as dangerous.

When delivery from below seems mechanically difficult, e.g. in occiput posterior positions when anterior rotation cannot be accomplished, or after a trial of labor in cases of borderline pelvic contraction symphysiotomy is advised, and I believe very good results have been reported from its employment. However, it is an operation which is virtually unknown in this country.

Prophylactic external version is advised for breech presentations.

"Partus Serotinus," or postmaturity is recognized—"if genuine, induce labor."

Antepartum hemorrhage is well described and for the most part the management advised is similar to that employed in this country. The same may be said of toxemia of pregnancy, though there seems to be more emphasis upon glucose and barbiturates and less upon hypotensive drugs than we are accustomed to.

The author is a staunch believer in the value of x-ray pelvimetry. His description of contracted pelvis and their effect upon labor is both practical and sound.

There are two particularly strange paragraphs, I thought, one on "how to plug a ruptured uterus" (with gauze) which is included in the discussion of rupture of the uterus, and the other on "Insanity During Pregnancy," which I am certain would make our psychiatrists shudder with horror over the lack of appreciation of modern concepts.

This book, then, might be well suited to the general practitioner in Ireland who is called upon to care for his obstetrical patients in their homes, but I do not believe that it is suitable for either students or practitioners in the United States where entirely different conditions exist, and many of the routines even, are so very different. This is not to say that there are not many interesting and sound observations to be found in the book. Certainly any obstetrician would be well rewarded to browse through it.

* * *

THE PRACTICE OF PSYCHIATRY IN GENERAL HOSPITALS—A. E. Bennett, M.D., Associate Clinical Professor of Psychiatry, University of California School of Medicine, Eugene A. Hargrove, M.D., Assistant Professor of Psychiatry, University of North Carolina, School of Medicine and Bernice Engle, M.A., Research Associate, Department of Psychiatry, University of California School of Medicine. University of California Press, Berkeley, 1956. 178 pages, \$4.00.

This excellent book is written for anyone who may have cause to be interested in the treatment of psychiatric patients in a general hospital. Dr. Bennett has been one of the outstanding pioneers in this very important and neglected field. He writes from experience. He has also asked other competent experts to write chapters in their special fields.

A great deal of fine practical information is given covering such aspects as financing, architecture, legal problems, administration, nursing, occupational therapy, social service and the day hospital plan.

This reviewer directed such a psychiatric unit for five years. I believe this is the most complete and useful presentation of this subject to date.

California M E D I C I N E

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KEY TO ABBREVIATIONS USED

(Or.)—Original Article; (Ed.)—Editorial (CMA)—California Medical Association; (CR)—Case Report; (I)—Information; (LE)—Letters to the Editor; (MJ)—Medical Jurisprudence.

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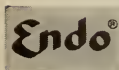


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Conference on Rural Health Set for Sacramento, January 25-26, 1957

All physicians are invited to attend the Third Annual California Conference on Rural Health which convenes January 25, 1957, in Sacramento at the Senator Hotel. The two-day session is expected to attract 400 physicians, educators, public health and farm leaders.

They will discuss:

- How Good Is Rural Health?
- Are You Safe At Home?
- Fads, Fallacies and Facts.
- What Is A Good Medical Examination?
- Solving Your Hospital Problems.
- What's New In Health Insurance?
- Lassen County Citizens Look At Health.

Physicians taking part in the program are:

Drs. Robb Smith, Orange Cove, chairman of the California Medical Association's committee on rural health; Walter Batchelder, San Francisco, director of California Medical Association's Cancer Commission; Paul H. Thomas, Sacramento, president of the Sacramento County Heart Association; Herbert Bauer, Woodland, Yolo County health officer; Robert Breedon, Weaverville; Ralph A. Teall, Sacramento, CMA district councilor, and Italo Daniele, Herlong.

The conference is sponsored by the California Rural Health Council which includes the CMA, California Academy of General Practice, California Congress of Parents and Teachers, California Farm Bureau Federation, California State Department of Public Health, University of California Agricultural Extension Service, and U.C. School of Public Health.

In addition, the California Hospital Association, the California State Department of Education, the California State Grange and the California County Supervisors Association are cooperating in the annual event.

American Association of Medical Assistants

Doctors' office aides now have a new national organization of their own: The American Association of Medical Assistants. The association was organized officially at a meeting in Milwaukee late in October, attended by 250 medical assistants representing 16 states.

"Medical assistant" is the term generally applied to any person employed in a physician's office or clinic as a nurse, secretary, receptionist, technician or combination "Girl Friday."

Last fall I reported that 75 women had turned out for a meeting called by the Kansas Medical Assistants Society in Kansas City, Kansas, to discuss possibilities of launching a national organization. All who attended that meeting expressed a unanimous desire to proceed with national organizational

efforts and during the past year a committee has been working toward that objective.

A year ago there were just nine state medical assistants groups in existence. Since last fall three new state groups have been formed and others are being organized. In almost every case, state assistants groups have the official blessing of state medical societies and generally a physicians advisory committee is appointed to offer suggestions in program planning and project designing.

A number of physicians were in attendance at the Milwaukee meeting. They helped to iron out problems relating to a constitution and bylaws. They were Drs. D. E. Dorchester, Sturgeon Bay, Wis.; Joseph Devitt, Milwaukee, Wis.; Wayne Fencil, Monroe, Wis.; Murray C. Eddy, Hays, Kansas; R. O. Hughes, Ottumwa, Ia.; Clyde Miller and Maurice Tinterow, both of Wichita, Kansas; and Ralph Shook, Kalamazoo, Mich. Jack Burke represented the Medical Society of Wisconsin and John Kadonsky the Medical Society of Milwaukee County. Leo Brown, American Medical Association public relations director, and Mrs. Carol Towner of the public relations department attended as American Medical Association observers.

According to the A.A.M.A. constitution, membership is open to anyone who works under a physician's supervision and who is an active member of a state medical assistants group.

The organization is nonprofit and an uncompromising statement rules out any unionization efforts within the group: "It is not nor shall it ever become a trade union or collective bargaining agency."

The objectives of the organization parallel those of the medical profession: "To inspire members to render honest, loyal and more efficient service to the profession and public; to strive to cooperate with the profession in improving public relations; to render educational services for the self-improvement of members and to stimulate a feeling of fellowship and cooperation; and to encourage and assist all unorganized medical assistants in forming local and state societies."

A six-member physicians advisory committee to A.A.M.A. is to be selected within the next few months by the executive committee of the association from names proposed by state assistants groups.

The A.A.M.A. wound up its three-day deliberations with election of officers. Maxine Williams, Kansas City, Kansas, who has served as chairman of the organizational committee during the past year, is president, and Mrs. Mary Kinn of Santa Ana, Calif., president-elect. Mrs. Marian Little, Cedar Rapids, Iowa, was named vice-president; Alice Budny, Milwaukee, recording secretary, and Mrs. Carmen Kline, Kansas City, Kansas, treasurer. Next year's meeting will be held in San Francisco in October, and Chicago was selected as site of the 1958 meeting.

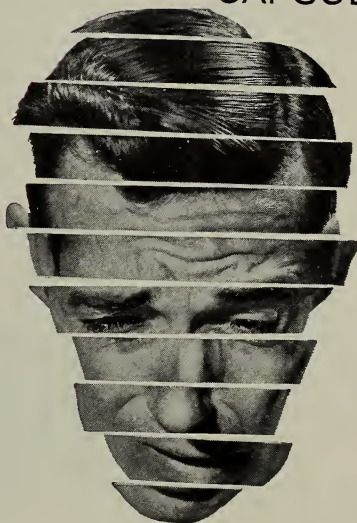
—A.M.A. Secretary's Letter

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... usually for 6 hours

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**Physicians Asked to Lead
In Highway Safety**

Two American Medical Association publications recently challenged physicians—to be more than just doctors to injured motorists—to become leaders in the whole field of road safety.

An editorial and article in a recent issue of the *Journal of the American Medical Association* and a guest editorial in a recent issue of *American Medical Association Archives of Internal Medicine* outlined the role of physicians in the fight against a "disease" that is killing persons at the rate of one every 14 minutes and injuring someone every 25 seconds in the U. S.

Success in meeting the problem of ever-increasing injury and death on the highways will require the cooperation of "the best minds in medicine, highway engineering, and car design," the *Journal* editorial said.

Physicians may be the logical leaders in a coordinated movement because of their biological science background and their intimate knowledge of crash effects and problems of human behavior that might figure in smashups, the *Journal* article quoted Dr. Fletcher D. Woodward, Charlottesville, Va., as saying. He is chairman of the American Medical Association's new committee on medical aspects of automobile injuries and deaths.

In fact, the more some physicians look into traffic safety the more they seem to see the possibility of a new medical specialty, which one general practitioner has suggested be called "medicotrafficology," the article said.

Dr. Jacob Kulowski, St. Joseph, Mo., said in the *Archives* that all branches of medicine and surgery must cooperate in both the treatment and prevention of auto accident injuries. Physicians who have observed the seriousness of some auto injuries should turn their attention to accident prevention through better medical standards of driver licensing and the maintenance of driver fitness. They should take a more active interest in medicolegal problems resulting from accidents, he said.

The *Journal* editorial pointed out that doctors can help reduce accidents by approving and supporting necessary research and by furnishing information to automotive designers on injuries, survivals, and deaths.

Physicians have a responsibility to prevent injury to individual patients, the editorial said. They must warn persons not to drive after taking drugs with a sedative effect, and that conditions such as severe pain or itching, while not direct accident hazards, can produce disturbances that may divert a driver's attention.

In addition, physicians can promote a sense of civic responsibility by supporting sound traffic safety programs and safety councils in their local communities, the editorial concluded.

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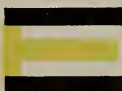
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1. Wittkower, E., and Russell, B.: Emotional Factors in Skin Disease, Paul B. Hoeber, Inc., New York, 1953, p. 4.
2. Lemere, F.: Northwest Med. 54:1098 (Oct.) 1955.

anti-anxiety factor with muscle-relaxing action



Philadelphia 1, Pa.

Editorials Warn Against Improper Use of Drugs

Warnings against the improper use of two types of medicine—drugs sold “over the counter” without a prescription and barbiturates sold only on prescription—were issued in a recent issue of the *Journal of the American Medical Association*.

The warnings, along with suggestions of how physicians and pharmacists can prevent improper use, appeared in two *Journal* editorials.

The great danger in using “over-the-counter” medicines lies in misreading or not reading labels, one editorial said. In addition, there is always the

possibility of delaying proper medical diagnosis because the individual may temporarily feel well or his symptoms may be “masked” by the drug’s action.

Most nonprescription drugs sold today have been proved to be “reasonably” harmless. In fact, they cannot be sold without a prescription until trials have shown they have no harmful side effects when taken in the proper amounts. The danger lies in excessive dosage.

The editorial explained that current federal legislation requires a prescription for the sale of any

(Continued on Page 82)

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*Schwartz, E.: New York J. Med. 56:570, 1956.

provides restoration of breathing capacity — Relief of symptoms [bronchospasm, cough, wheezing, dyspnea] is maintained for long periods with relatively small doses.*

minimal effect on electrolyte balance — "in therapeutically effective doses . . . there is usually no sodium or fluid retention or potassium loss."* Lack of edema and undesirable weight gain permits more effective therapy particularly for those with cardiac complications.

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Editorials Warn Against Improper Use of Drugs

(Continued from Page 78)

drug which is potentially unsafe when used without medical supervision. However, a manufacturer or even an interested person who believes the prescription restriction is no longer necessary, and has evidence to support his contention, may petition the Food and Drug Administration to allow over-the-counter sales, provided labeling includes adequate directions and warnings.

It is here that physicians have a responsibility, the editorial said. By reporting any harmful side

effects resulting from the use of a prescribed drug, physicians may prevent a potentially harmful drug from going on sale without a prescription.

In another editorial, Dr. Harris Isbell of the National Institute of Mental Health, Addiction Research Center, U. S. Public Health Service Hospital, Lexington, Ky., said that symptoms of barbiturate intoxication have been found to be similar to those of chronic alcoholism.

If, as it appears, alcohol and barbiturates actually cause similar nervous system changes, adequate doses of either should partly or completely suppress symptoms resulting from the withdrawal of the

(Continued on Page 90)

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English, *et al.*⁴ noted that a daily dose of 1 to 1.5 Gm. of tetracycline resulted in urinary levels as high as 1 mg. per milliliter.

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1. Finland, M., *et al.*: *J.A.M.A.* 154:561 (Feb. 13) 1954.
2. Prigot, A. and Marmell, M. *Antibiotics and Chemotherapy* 4:1117 (Oct.) 1954.
3. Trafton, H. and Lind, H.: *idem* 4:697 (June) 1954.
4. English, A., *et al.*: *idem* 4:441 (April) 1954.

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BOOKS RECEIVED

BONE STRUCTURE AND METABOLISM—Ciba Foundation Symposium—G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., and Cecilia M. O'Connor, B.Sc., Editors. Little, Brown and Company, Boston, 1956. 299 pages, 121 illustrations, \$8.00.

CARE OF THE LONG-TERM PATIENT—Volume II of Chronic Illness in the United States, Commission on Chronic Illness. Published for the Commonwealth Fund, by Harvard University Press, Cambridge, Mass., 1956. 606 pages, \$8.50.

CLINICAL EXAMINATIONS IN NEUROLOGY—Members of the Sections of Neurology and Physiology, Mayo Clinic and Mayo Foundation for Medical Education and Research. W. B. Saunders Company, Philadelphia, 1956. 370 pages, \$7.50.

CLINICAL PATHOLOGY—Application and Interpretation—Second Edition—Benjamin B. Wells, M.D., Ph.D., Director of Clinical Investigation, The Lynn Clinic, Detroit. W. B. Saunders Company, Philadelphia, 1956. 488 pages, 25 figures, \$8.50.

CLINICAL ROENTGENOLOGY—Volume IV—The Digestive Tract, the Gall Bladder, Liver and Pancreas, the Excretory Tract and Special Studies Emphasizing Differential Considerations—Alfred A. de Lorimier, M.D., Radiologist, St. Francis Memorial Hospital, San Francisco; Henry G. Mochring, M.D., Radiologist, Duluth Clinic, Duluth, Minnesota; and John R. Hannan, M.D., Radiologist, Cleveland, Ohio. Charles C. Thomas, Publisher, Springfield, Ill., 1956. 676 pages, \$24.50.

CLINICAL UNIPOLAR ELECTROCARDIOGRAPHY—Third Edition—Bernard S. Lipman, M.D., Instructor in Medicine, Emory University School of Medicine and Edward Massie, M.D., Associate Professor of Clinical Medicine, Washington University School of Medicine. The Year Book Publishers, Inc., 200 East Illinois St., Chicago, 1956. 397 pages, \$7.50.

DIABETES MELLITUS—Handbook for Physicians—Howard F. Root, M.D., Medical Director, Joslin Clinic, Boston, Lecturer in Medicine, Harvard University; and Priscilla White, M.D., Instructor in Pediatrics, Tufts University, Boston. Landsberger Medical Books, Inc. Distributed by The Blakiston Division of the McGraw-Hill Book Co., New York, 1956. 346 pages, \$7.00.

DICTIONARY OF POISONS—Ibert Mellan and Eleanor Mellan. Philosophical Library, New York, 1956. 150 pages, \$4.75.

DISEASES OF THE BREAST—C. D. Haagensen, M.D., Professor of Clinical Surgery, The College of Physicians and Surgeons, Columbia University. W. B. Saunders Company, Philadelphia, 1956. 751 pages, 404 figures and 25 charts, \$16.00.

DISEASE IN INFANCY AND CHILDHOOD—Second Edition—Richard W. B. Ellis, O.B.E., M.A., M.D., F.R.C.P., Professor of Child Life and Health, University of Edinburgh, E. & S. Livingstone, Ltd., Edinburgh—Distributed in U. S. by The Williams and Wilkins Company, Baltimore, 1956. 710 pages, \$10.00.

DISEASES OF THE HEART—Second Edition—Charles K. Friedberg, M.D., Attending Physician, The Mount Sinai Hospital, New York; Associate Clinical Professor of Medicine, College of Physicians and Surgeons, Columbia University. W. B. Saunders Company, Philadelphia, 1956. 1161 pages, 157 figures, \$18.00.

DYNAMIC PSYCHIATRY IN SIMPLE TERMS—Robert R. Moxer, M.D., Senior Staff Psychiatrist, Community Clinic, Massachusetts Mental Health Center and Harvard Medical School. Springer Publishing Company, Inc., 44 East 23rd St., New York 10, N. Y., 1956. 174 pages, \$2.50.

EDUCATING SPASTIC CHILDREN—The Education and Guidance of the Cerebral Palsied—F. Eleanor Schonell, M.A., Ph.D., formerly Research Fellow, University of Birmingham, England, Department of Pediatrics and Child Health. Philosophical Library, Publishers, 15 40th Street, New York 16, N. Y., 1956. 242 pages, \$6.00.

EPILEPSY AND THE LAW—A Proposal for Legal Reform in the Light of Medical Progress—Roscoe L. Barrow, Dean, University of Cincinnati College of Law, and Howard D. Fabing, M.D., Chairman, Legislation Committee, American League Against Epilepsy, Past-President, American Academy of Neurology. Hoeber-Harper, Paul B. Hoeber, Inc., 48 East 33rd St., New York 16, N. Y., 1956. 177 pages, \$5.50.

EPILEPTIC SEIZURES—A Correlative Study of Historical, Diagnostic, Therapeutic, Educational, and Employment Aspects of Epilepsy—John R. Green, M.D., and Harry F. Steelman, M.D., The Williams and Wilkins Company, Baltimore, 1956. 165 pages, \$5.00.

EXAMINATION OF THE NERVOUS SYSTEM—A Student's Guide—A. Theodore Steegmann, M.D., Professor of Medicine (Neurology), University of Kansas School of Medicine, Kansas City, Kansas. The Year Book Publishers, Inc., 200 East Illinois Street, Chicago, 1956. 164 pages, \$3.75.

FRACTURES, DISLOCATIONS AND SPRAINS, THE MANAGEMENT OF—Sixth Edition—John Albert Key, B.S., M.D., Clinical Professor Emeritus of Orthopedic Surgery, Washington University School of Medicine, St. Louis; and H. Earle Conwell, M.D., Associate Professor of Orthopedic Surgery, University of Alabama School of Medicine, Birmingham. The C. V. Mosby Company, St. Louis, 1956. 1168 pages, \$20.00.

HANDBOOK OF PEDIATRIC MEDICAL EMERGENCIES—Second Edition—Adolph G. DeSanctis, M.D., Professor of Pediatrics, Post-Graduate Medical School, New York University. The C. V. Mosby Company, St. Louis, 1956. 389 pages, 73 illustrations, \$6.25.

MERCK MANUAL OF DIAGNOSIS AND THERAPY, THE—9th Edition—Editorial Board: Charles E. Lyght, M.D., Editor; William P. Boger, M.D., George A. Carden, M.D., Augustus Gibson, M.D., Dickinson W. Richards, M.D. Merck & Co., Inc., Rahway, N. J., 1956. 1870 pages, Regular Edition: \$6.75 (Fabrikoid binding), DeLuxe Edition: \$9.00 (flexible Cordoba Fabrikoid binding with gold edged pages).

ORGANIZED HOME MEDICAL CARE IN NEW YORK CITY—A Study of Nineteen Programs by the Hospital Council of Greater New York. Published for the Commonwealth Fund, by Harvard University Press, Cambridge, Mass., 1956. 538 pages, \$8.00.

PAPER ELECTROPHORESIS—Ciba Foundation Symposium—G. E. W. Wolstenholme, O.B.E., M.A., M.B., B. Ch., and Elaine C. P. Millar, A.H.-W.C., A.R.I.C., Editors. Little, Brown and Company, Boston, 1956. 224 pages, 74 illustrations, \$6.75.

PELVIMETRY—Herbert Thoms, M.D., Emeritus Professor of Obstetrics and Gynecology, Yale University School of Medicine. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1956. 120 pages, \$5.00.


PERSON BEHIND THE DISEASE, THE—Julius Bauer, M.D., Clinical Professor of Medicine, College of Medical Evangelists, Grune & Stratton, New York, 1956. 136 pages, \$3.50.

PRACTICAL PEDIATRIC DERMATOLOGY—Morris Leider, M.D., Associate Professor of Dermatology, New York University Post-Graduate Medical School, 433 pages, \$10.50. The C. V. Mosby Company, St. Louis, 1956.

PRINCIPLES OF CLINICAL ELECTROCARDIOGRAPHY—Mervin J. Goldman, M.D., Assistant Chief of the Medical Service and Cardiologist, Oakland Veterans Administration Hospital; Assistant Clinical Professor of Medicine, University of California School of Medicine. Lange Medical Publications, Los Altos, 1956. 310 pages, \$4.50.

PSYCHOLOGICAL ASPECTS IN THE CARE OF INFANTS AND CHILDREN—Pediatric Research Conference—Ross Laboratories, Columbus 16, Ohio, 1956. 90 pages, no charge.

SEXUAL CRIMINAL, THE—A Psychoanalytical Study—Second Edition—J. Paul de River, M.D., F.A.C.S., Founder and Director of the Sex Offense Bureau, City of Los Angeles, Instructor in Criminal Psychiatry and Sexology, California Peace Officers' Training Institute, University of California at Los Angeles. Charles C. Thomas, Publisher, Springfield, Illinois, 1956. 375 pages, \$6.50.




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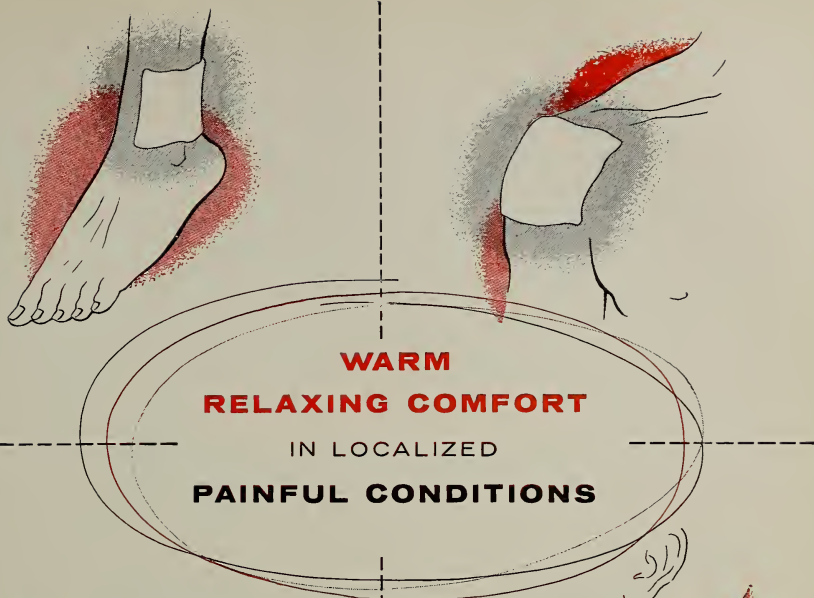
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(Continued on Page 96)



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Editorials Warn Against Improper Use of Drugs

(Continued from Page 82)

other. This helps explain how alcoholics can substitute barbiturates for alcohol and vice versa.

Persons who are intoxicated by barbiturates are menaces, both to themselves and others, Dr. Isbell said. For this reason, the medical and pharmaceutical professions bear a heavy responsibility in prescribing and dispensing barbiturates.

Great care should be used in prescribing barbiturates for unstable persons, and such persons should be watched carefully, he said, adding that simple insomnia is seldom a valid reason for using barbiturates. He also warned that physicians should not prescribe a barbiturate for a stranger unless "the indication for the drug is unmistakable."

Prescriptions should be limited in amount and the laws against refills without a new prescription should be strictly observed, he said.

Fat Upper Arms Confuse Blood Pressure Meter

A more accurate reading of blood pressure in obese persons can be obtained by measuring the pressure below the elbow rather than above, as is usually done, three New York physicians said recently.

They said that falsely high blood pressure readings may be obtained in people with large flabby upper arms. The reason for this is not entirely clear, but it may be due to the larger circumference and the compression of flabby tissue in the upper arms, they said in a recent issue of the *Journal of the American Medical Association*.

In experiments with nonobese persons, one arm was loosely wrapped with cotton which was compressed by the blood pressure cuff. The reading in the wrapped arm was much higher than in the unwrapped arm. However, when less-compressible

(Continued on Page 96)

Physicians

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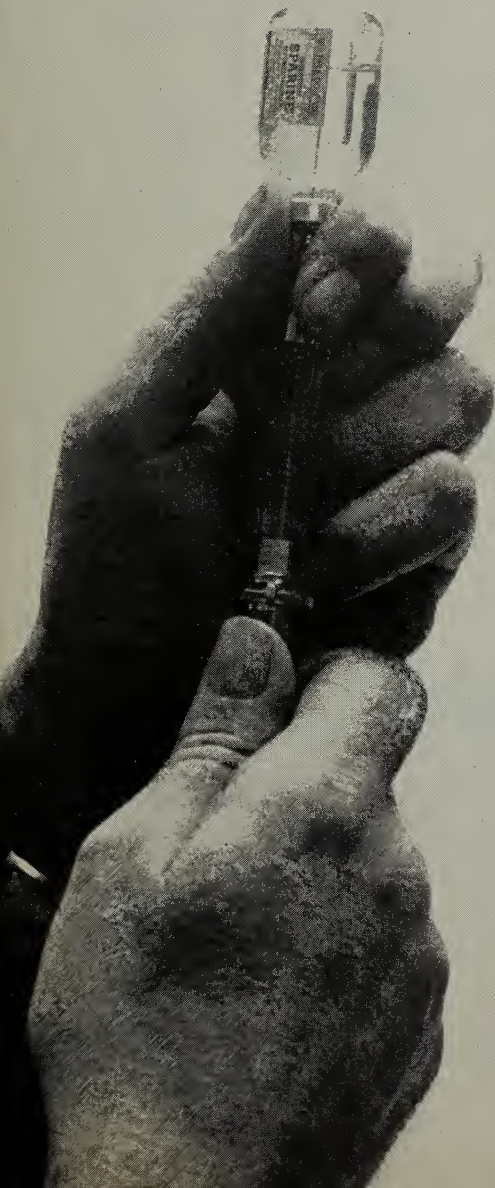
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Note: Before administering SPARINE, it is important for the physician to review the information in the package circular, especially those parts of it dealing with administration, dosage, and possible side-effects.

The virus which causes Japanese B encephalitis has been found for what is probably the first time in a case of the disease brought back to this country from the Far East.

Doctors making the finding said it points up earlier warnings about the possibility of introducing the virus into the United States where conditions could allow its spread. The disease, an inflammation of the brain, is related to "sleeping sickness" and polio.

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A palatable concentrate of 80% purified soy phospholipids (phosphatidyl choline, phosphatidyl ethanolamine and inositol phosphatide) with 20% wheat germ and oat flour in granular form. Dose: 2 to 3 heaping teaspoons (15 to 20 grams) daily; 15 grams supply 1.6 mg. thiamine hydrochloride (added).

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American soldier just returned from Korea, according to Lt. Col. Harold E. Shuey (MC) and Lt. Col. Trygve O. Berge (MSC) from the Sixth Army medical laboratory, Fort Baker, Calif. They made their report in a recent issue of the *Journal of the American Medical Association*.

Only three other cases of the disease occurring in persons while enroute or after arrival here from the Far East have been reported, and as far as the Army physicians know, no virus was found in those three.

They said the virus could become well established if brought into the western United States, where

(Continued on Page 98)

Plan to attend the Third Annual California Rural Health Council, January 25 and 26, Hotel Senator, Sacramento. *Contact:* GLENN GILLETTE, Associate Director, Public Relations, California Medical Association, 450 Sutter Street, San Francisco 8.



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ALCOHOLISM?

A DEMAND for alcohol not to be confused with RESULTS of excessive drinking.

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RESULTS?

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(Continued from Page 88)

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Fat Upper Arms Confuse Blood Pressure Meter

(Continued from Page 90)

gauze was used, there was only a slight difference in the readings in the two arms.

The authors also found that persons with large—but muscular—upper arms did not have falsely high blood pressure readings, apparently because the muscular tissue is not compressible.

In obese persons with flabby upper arms, the doctors measured the blood pressure internally by inserting a needle into an artery. They then compared that reading with readings obtained in the forearm and the upper arm. The arterial pressure was similar to that of the forearm.

The authors are Dr. Kenneth W. Trout, Hillsdale, N. Y., and Drs. Charles A. Bertrand and M. Henry Williams, Valhalla, N. Y.

Seventeen Medical Schools Complete \$65 Million in Construction

Seventeen medical schools—16 in the United States and one in Canada—have reported completion of construction projects costing 65 million dollars during the 1955-56 school year.

During the same period, 17 schools in the United States and two in Canada have undertaken new construction projects costing approximately 45 million dollars.

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Relieves the **T** pain where it hurts: the gut

2 caps t.i.d.

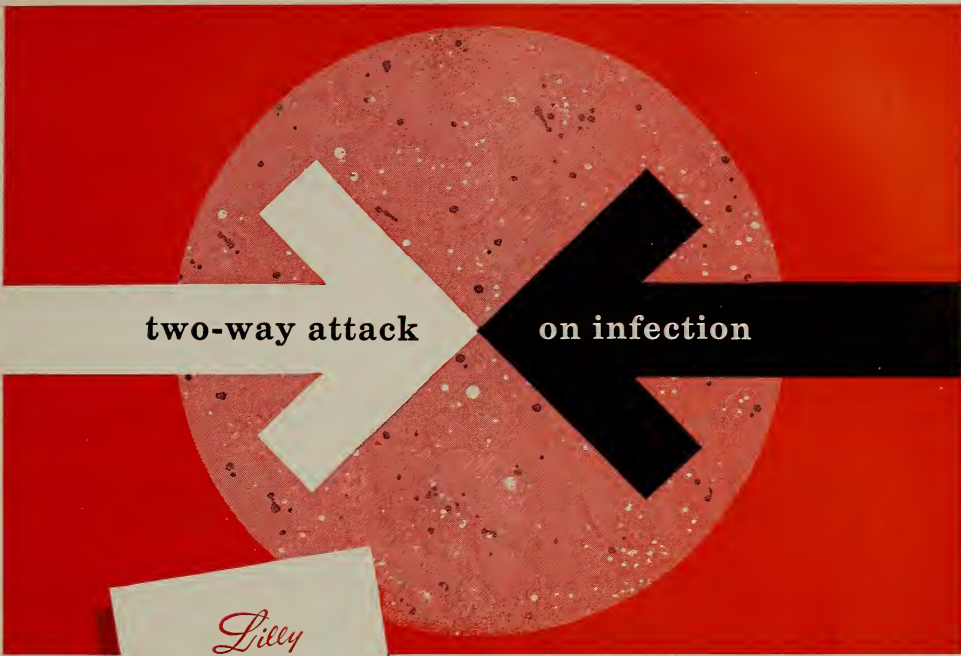
1. Hardin, J. H.; Levy, J. S., and Seager, L.: South. M. J. 47:1190, 1954.

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'V-Cillin-Sulfa' provides you greater control over a wider range of micro-organisms. 'V-Cillin' (Penicillin V, Lilly) and sulfas used concurrently produce faster and more effective antibacterial action in certain infections. In general, the combination is most beneficial in mixed infections, infections due to bacteria only moderately susceptible to either agent, and conditions in which bacterial resistance might develop.

The much higher penicillin blood levels produced by 'V-Cillin' and the effectiveness and safety of the triple sulfas make 'V-Cillin-Sulfa' your most valuable preparation of its type.

DOSAGE: 1 to 2 tablets q.i.d.

SUPPLIED: Each tablet provides 125 mg. (200,000 units) 'V-Cillin' plus 0.5 Gm. sulfas—equal parts of sulfadiazine, sulfamerazine, and sulfamethazine.

80TH ANNIVERSARY 1876 • 1956 / ELI LILLY AND COMPANY

Virus Recovered in Case of Japanese B Encephalitis

(Continued from Page 94)

other viruses causing other types of encephalitis are prevalent.

Earlier researchers have shown that seven species of mosquitoes in the western United States can transmit mouse-brain-adapted strains of the Japanese B encephalitis virus to mice in the laboratory. This means that the disease possibly could be spread in the United States if a person infected with the disease (and carrying the virus in his blood) were bitten by one of these mosquitoes.

The soldier was admitted to the United States Army Hospital, Fort Lawton, Wash., on September 14, 1954, complaining of fever, eye pain, and headache. In the next few days, these symptoms became worse, while mental confusion and respiratory symptoms appeared. He died four days after admission.

The patient had apparently contracted the virus two week before while he was in Pusan, Korea, an area in which earlier outbreaks of the disease among American servicemen had occurred, they said.

The virus was finally isolated and identified by using extensive laboratory procedures involving mice and tissue taken from the patient's brain and chest muscle.

CALIFORNIA MEDICAL ASSOCIATION

1957 ANNUAL SESSION

AMBASSADOR HOTEL, LOS ANGELES

APRIL 28 — MAY 1, 1957



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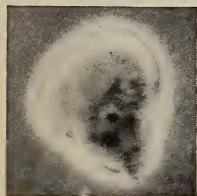
EXPLODES

TRICHOMONADS

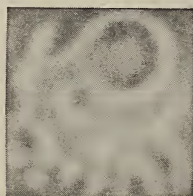
WITHIN 15 SECONDS

WITH the Davis technique, both VAGISEC® liquid and jelly, flare-ups of vaginal trichomoniasis rarely occur.

VAGISEC liquid actually *explodes* trichomonads within 15 seconds after douche contact.¹ Better than 90 per cent apparent cures follow use of this new trichomonacide developed as "Carlendacide," by Dr. Carl Henry Davis, noted gynecologist, and C. G. Grand, cell physiologist.²



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No trichomonad escapes—Three chemicals in VAGISEC liquid combine in balanced blend to weaken the cell membrane, to remove waxes and lipids, to denature the protein. With its cell wall destroyed, the trichomonad imbibes water, swells and explodes.

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The Davis technique†—The physician uses VAGISEC liquid as a vaginal scrub at the office. He prescribes VAGISEC liquid and jelly for concomitant use at home.

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References: 1. Davis, C. H.: J.A.M.A. 157:126 (Jan. 8) 1955.

2. Davis, C. H.: West. J. Surg. 63:53 (Feb.) 1955.

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Meprobamate May Cause Allergic Reactions

Several cases of allergic reactions to the tranquilizing drug meprobamate (Miltown or Equanil) were reported recently by two Beverly Hills, California, physicians.

The reactions took the form of skin eruptions and itching, extreme excitement, muscular paralysis or stomach upsets. Dr. Henry T. Friedman, an allergist, and Dr. Willard L. Marmelzat, a dermatologist, said in a recent issue of the *Journal of the American Medical Association*.

The desire for a harmless pill that will almost magically return man to an emotional state free from everyday stresses and strains is a deep-rooted one, they said. There has been widespread indiscriminate use of the drug, especially in southern California.

Scarcely a day goes by without some laudatory public mention of "this wonderful new tranquilizing drug," but few reports of adverse reactions to the drug have been made, they said.

For these reasons the doctors felt they should issue a warning about their 10 cases of allergic reactions to meprobamate. They also mentioned that other physicians in the Los Angeles area have seen, but have not reported, allergic reactions severe enough to require hospitalization.

Five of their patients developed severe skin reactions after taking the drug. One patient broke out with a rash within three hours and another within six hours after taking the first pill. The eruptions usually appeared first on the lower part of the body, but the breast and arms were also affected.

"Paradoxical reactions" were reported in four patients. Three became extremely excited instead of calm after taking the drug. The excitement subsided after the medicine was withdrawn. Another patient developed diarrhea, cramps and gas after taking two pills. This was surprising, they said, because meprobamate normally does not affect the involuntary muscles of the stomach and intestines. Paradoxical reactions, where sedation is expected and excitement produced, have appeared in relation to the barbiturates and other sedatives, they pointed out.

Another patient developed nausea and double vision resulting from muscular paralysis in the eye after taking only three pills.

The most remarkable thing about their cases was the fact that a patient who had never taken meprobamate would develop the reaction within three to five hours after taking one tablet, they said. Usually in drug reactions, the patient has had prior contact with the compound. A possible reason is that these patients had been exposed previously to chemically related compounds which sensitized them to meprobamate.

Dr. Friedman is instructor in medicine at the University of California at Los Angeles, and Dr. Marmelzat is on the staffs of Queen of Angels Hospital and Santa Rita Clinic, Los Angeles.

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safety
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*in antibiotic therapy...
particularly for the 90% of
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at home or in the office...*

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of the pneumonias*

The new synergistic formulation of tetracycline with oleandomycin (Matromycin®) brings to antibiotic therapy a new extended antimicrobial spectrum which includes even "resistant" staphylococci, while it provides protection against the emergence of new resistant strains. Indicated in the treatment of pneumonia (with or without bacteremia) caused by pneumococci, streptococci, staphylococci, or mixed flora; primary atypical pneumonia.

Supplied: Capsules, 250 mg. (oleandomycin 83 mg., tetracycline 167 mg.).

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*TRADEMARK

Portable Electronic Cardiac Monitor Described

A three-pound, 120-cubic-inch device which shows visually the electrical impulses of the heart during surgery or resuscitation was described recently.

Six researchers from the Veterans Administration Hospital, Hines, Ill., said the cardiac monitor was devised to help surgeons and anesthesiologists during surgery, but it could be used by police and fire department rescue and resuscitation squads to tell if the heart is functioning in cases of drowning, electric shock, auto accidents, and severe injury.

The electronic monitor, which is powered by four flashlight batteries, was described in a recent issue of the *Journal of the American Medical Association*. Electrodes attached to the forearms of the patient pick up the cardiac impulses and feed them into the monitor where they are indicated by a magnetic needle.

If the heart is functioning normally, the needle shows a uniform movement. However, when the needle produces small, irregular and erratic movements, it is a sign of ventricular fibrillation, a con-

(Continued on Page 110)

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PRO-ACET is Professional and Economical; a 6 oz. bottle prepares 9 gallons of douche for \$1.25, and 12 oz. at \$2.00 (Approx. cost 3 cents per quart of douche).

Formula for Pro-Acet Concentrate: Citric Acid 2.5%; Acetic Acid 4.0%; Lactic Acid 2.0%; Sodium Lauryl Sulfate 3.0%; Dextrose 5.0%; Lactose (beta) 2.5%; Sodium Acetate 2.5%; Methyl Paraben 0.2; all chemicals U.S.P. in a solution of Distilled Water.

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"clinical response good or excellent"

In one recent study, 18 patients with acute follicular tonsillitis and septic sore throat, were given erythromycin. Infecting organism was *Str. pyogenes*. The investigator stated, "In all 18, the clinical response could be regarded as either good or excellent."¹

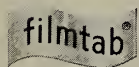
This, of course, is only one of many reports showing the effectiveness of ERYTHROCIN against coccic infections. You'll get the same good results (nearly 100% in common, bacterial respiratory infections) when your prescription reads *Filmstab* ERYTHROCIN Stearate.

"toxicity lower in erythromycin-treated patients"

After a study of 208 patients treated with erythromycin (78), procaine penicillin (78) and a placebo (52), the investigator stated: "... the incidence of toxicity (compared to procaine penicillin) was significantly lower in the erythromycin-treated patients."¹

Actually, ERYTHROCIN stands on a remarkable record of safety. After four years, there's not a single report of a severe or fatal reaction attributable to erythromycin. Also, allergic reactions rarely occur. *Filmstab* ERYTHROCIN Stearate (100 and 250 mg.), is available in bottles of 25 and 100, at all pharmacies.

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® *Filmstab*—Film sealed tablets, Abbott; pat. applied for.

1. Herrell, W. E., *Erythromycin*, Antibiotics Monographs, No. 1, p. 29, New York, Medical Encyclopedia, Inc., 1955.

^{*} *Idem* p. 30.

Erythrocin[®]

STEARATE

(Erythromycin Stearate, Abbott)

Portable Electronic Cardiac
Monitor Described

(Continued from Page 106)

dition in which the heart ceases to beat regularly and the muscle twitches. Cardiac arrest—or sudden unexplained heart stoppage—is indicated when the needle stops altogether.

The monitor is especially useful, the authors said, in situations of extreme shock, severe hemorrhage or suffocation where blood pressure and pulse rate sometimes may fall to imperceptible levels. In such cases the monitor can show that the heart is still functioning even though there is no detectable pulse.

This should prevent unnecessary opening of the chest for cardiac massage and speed the beginning of proper treatment, they said.

The authors pointed out that nurses, technicians and even nonmedical rescue personnel can operate the monitor readily because of the simplicity of design and interpretation. In addition, it is sufficiently inexpensive to be made available for small hospitals and rescue squads.

The authors are Theodore Fields, M.S., Drs. Ervin Kaplan, Bernard Abrams, Robert Simpson and Archer Gordon, and Joseph Kenski, E.T. (electronics technician).



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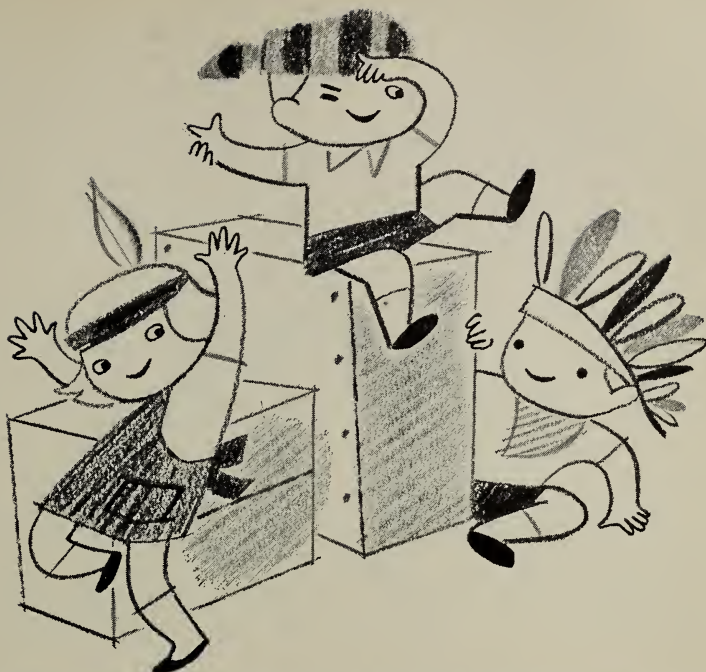
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Antihistamine Used as Anesthetic Agent

Promethazine, which has proved successful in combating seasickness and allergic conditions, may turn out to be one of the safest drugs available for producing light anesthesia, a Chicago anesthesiologist said recently.

Promethazine (Phenergan) has been used as one of the anesthetic agents given to patients to prepare them for surgery under hypothermia, popularly known as "freezing" or "artificial hibernation." It has also been used to quiet hiccupping and control nausea and vomiting, and has proved especially safe as a sedative for children and old people, Dr. Max S. Sadove said in a recent issue of the *Journal of the American Medical Association*.

The compound is an antihistaminic derivative of phenothiazine, from which chlorpromazine (Thorazine), one of the new "tranquilizing" drugs, is also derived. Promethazine was developed in France about 10 years ago and has been available in the United States for only a relatively short time.

Dr. Sadove has used the compound for about 1,000 patients undergoing regional, local and general anesthesia for surgery. He found that combining it with other anesthetic agents reduced the amount of other agents necessary. It also reduced the hazards of falling blood pressure and excessive heart rate during anesthesia.

He concluded from his preliminary survey that promethazine is a valuable agent for use with spinal and regional anesthesia. Although further investigation is needed to confirm his findings, he said it appears that promethazine is one of the safest drugs available for producing basal anesthesia, on which to base further and deeper anesthesia.

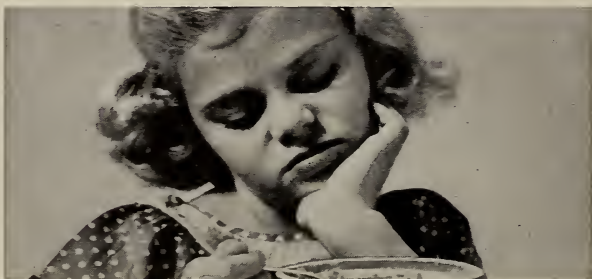
Promethazine was used alone and with other agents for preoperative sedation. Alone it produced results similar to those of the barbiturates. With meperidine, an anesthetic, it produced a condition in which the patient, while not actually asleep, lay quietly without interest in his environment but able to answer questions.

It also was useful as a postoperative pain-reliever. There seemed to be less pain with smaller amounts of promethazine and meperidine than with larger doses of narcotics alone. The patients seemed detached from their discomfort, resting quietly with stable blood pressure, pulse and respiration, while still responding to questions.

Elderly patients especially benefited from the drug. They appeared to experience less confusion with promethazine than with many other sedatives. Small amounts of the drug gave excellent results in children requiring sedation.

Dr. Sadove noted that a small amount stopped nausea and vomiting during local or regional anes-

(Continued on Page 114)



How to reform a persnickety eater



Weight gain and increased interest in food often follow the use of REDISOL as a dietary supplement. The cherry-flavored Elixir or the soluble Tablets are both readily miscible with liquids.



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Algebraic Formula Suggested For Calculating Diets

Some dieters arrive at their daily allowance of calories by guesswork; others by reading diet guides. Now they can figure it out algebraically.

A Philadelphia doctor outlined in a recent issue of the *Journal of the American Medical Association* a "simple aid" for calculating diets. At first glance it looks pretty complicated, but actually it turns out to be a simple algebraic equation.

Dr. Ralph J. Slonim Jr. of Hahnemann Medical College explained that an ideal weight exists for everyone (110 pounds for the first five feet of height plus five pounds for every inch above that, with a 10 per cent variation for body build). There is also an ideal number of calories which, when eaten daily, keeps the weight stable. However, when more than the required calories are consumed, the person gains weight. When he eats fewer calories, he loses.

So Dr. Slonim worked out a long equation involving the ideal weight, the height and the amount of desired weight loss, using H for height in inches, L for pounds per month weight loss desired, and C for the number of calories which can be eaten daily and cause a weight loss.

The equation started out like this:

$$C = 35 \left\{ \frac{5(H - 60) + 110}{2.2} \right\} - \frac{L \times 9 \times 1,000}{2.2 \times 2 \times 30}$$

But Dr. Slonim boiled it down to this:

$$C = 11.4(7H - 266 - 6L)$$

For instance, if you are five feet six inches tall (66 inches), and want to lose 10 pounds a month, your equation would look like this:

$$C = 11.4(7 \times 66 - 266 - 6 \times 10)$$

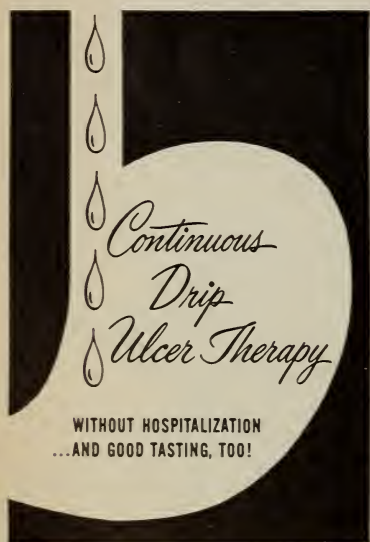
When you work this out, you get 1,550.4 calories. If you eat only that amount every day for a month, you should lose 10 pounds.

Antihistamine Used as Anesthetic Agent

(Continued from Page 112)

thetia within 10 to 12 minutes after administration. It also produced excellent results when given to two patients who had hiccups during spinal anesthesia. This response may have been purely coincidental, he said, but it is worth further investigation.

Promethazine acts rapidly and produces an excellent degree of sedation of fairly prolonged duration. Few side-effects have occurred and it appears to be "extremely safe," Dr. Sadove concluded.



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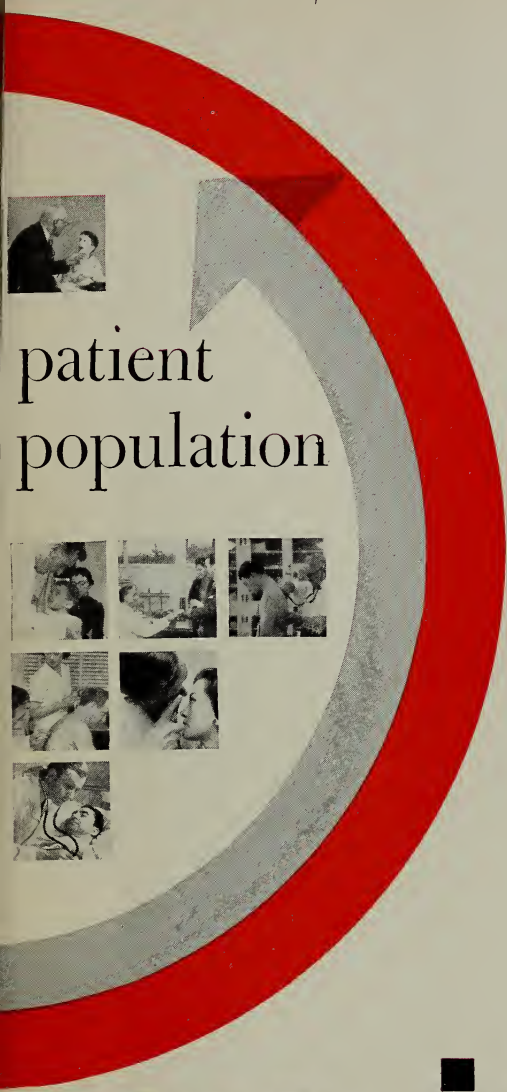
A recent clinical study* of 46 ambulatory nonhospital patients treated with Nulacin† and followed up to 15 months describes the value of ambulatory continuous drip therapy by this method. Total relief of symptoms was afforded to 44 of 46 patients with duodenal ulcer, gastric ulcer and hypertrophic gastritis.

The delicately flavored tablets dissolve slowly in the mouth (not to be chewed or swallowed). They are not noticeable and do not interfere with speech.







Nulacin tablets are supplied in tubes of 25 at all pharmacies. Physicians are invited to send for reprints and clinical sample.

*Steigmann, F., and Goldberg, E.: Ambulatory Continuous Drip Method in the Treatment of Peptic Ulcer, *Am. J. Digest. Dis.* 22:67 (Mar.) 1955.

†Mg trisilicate 3.5 gr.; Ca carbonate 2.0 gr.; Mg oxide 2.0 gr.; Mg carbonate 0.5 gr.



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Polio Incidence Continues at Low Level

Poliomyelitis incidence in the United States is remaining at an unusually low level this year. Reported cases for the current disease year, April 1st to September 1st, were approximately one-half those reported during the equivalent period in 1955. As of September 1st, 7,827 cases had been reported as compared to 15,128 at this time last year.

California is experiencing a slightly higher incidence of poliomyelitis this current disease year than in 1955—1,048 cases as compared with 913. However, incidence declined during the two-week period, August 25th to September 8th, continuing for the second two-week period, an unusual down-trend for this time of the year. The number of cases for the four-week period, August 11th to September 8th, has fallen well below the five-year median as noted in the accompanying table.

The proportion of paralytic cases, though still somewhat higher than last year—64 per cent as compared with 52 per cent—also appears to be gradually declining. During August, 56 per cent of the reported cases were listed as paralytic as compared with 71 per cent in July.

Paralytic polio has been reduced 85 per cent for children who have received two inoculations or more. The total incidence of polio in the vaccinated

population has been reduced approximately 70 to 75 per cent.

Of 1,048 polio cases reported this disease year as of September 8th, only 134 (13 per cent) had received at least one inoculation of polio vaccine at some time prior to onset. Of 673 paralytic cases reported this year, 604 (approximately 90 per cent) had received no inoculation, 34 (5 per cent) had a single inoculation, and the remaining 35 (5 per cent) had two or more inoculations prior to onset.

It is estimated that only half of the children under 15 years of age in California have been vaccinated. Very few inoculations have as yet been given in the 15-19 and 20-40 age group. Increased effort to include these groups is desirable because approximately one-third of all poliomyelitis cases occur in people over 15 years of age.

TOTAL:	Two-week period ending		
	Aug. 11	Aug. 25	Sept. 8
1956.....	188	147	119
1955.....	97	152	122
Five-year median 1951-1955.....	197	230	297
PARALYTIC:			
1956.....	96	94	70
1955.....	44	70	69
Five-year median 1951-1955.....	128	140	182
PER CENT PARALYTIC:			
1956.....	51	64	59
1955.....	45	46	57
Five-year median 1951-1955.....	65	61	61

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